

KIC 005529501

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
005529501-01	OBS	6592.01	1.519521	132.555614	10.4	4.982	8.3	7.9	1.31	6168	0.49	3090.63
005529501-02	OBS	No	610.743612	319.826752	300.0	2.583	14.6	6.2	1.31	6168	2.49	1.04
005529501-03	OBS	No	181.746516	268.110386	85.3	29.841	9.7	5.6	1.31	6168	1.36	5.24
005529501-04	OBS	No	628.201616	319.026794	164.1	5.896	11.2	6.7	1.31	6168	1.91	1.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005529501-01	OBS	FP	0.00	1	0	0	1	MOD_NONUNIQ_ALT—EPHEM_MATCH
005529501-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

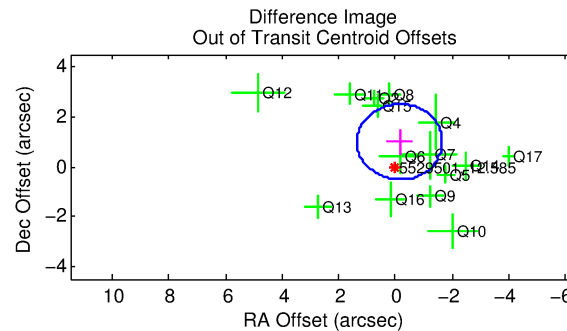
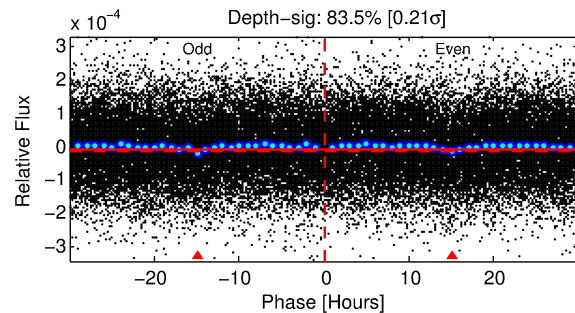
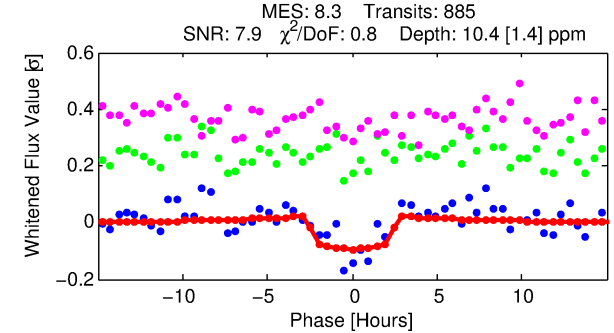
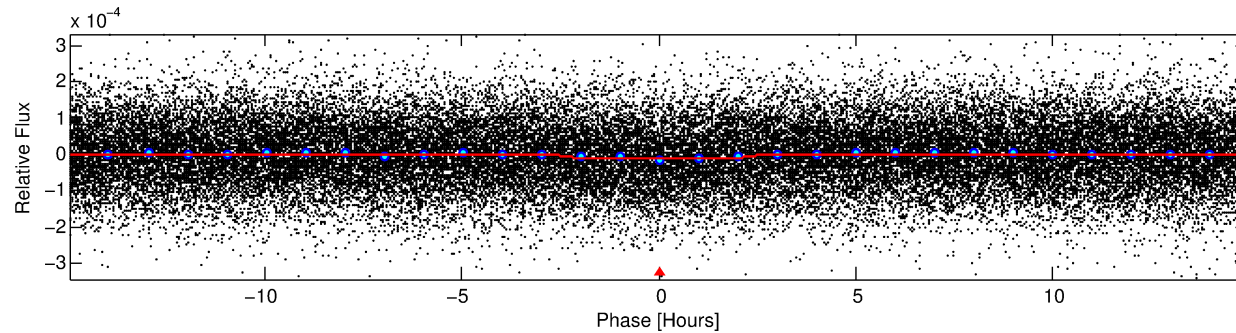
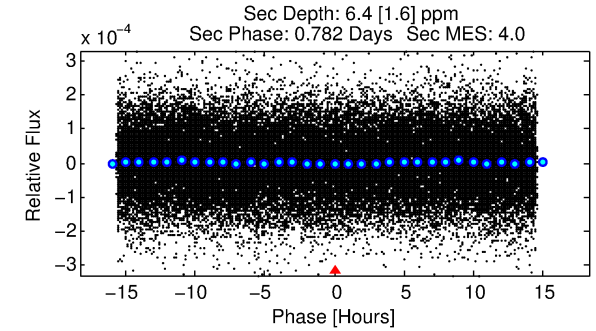
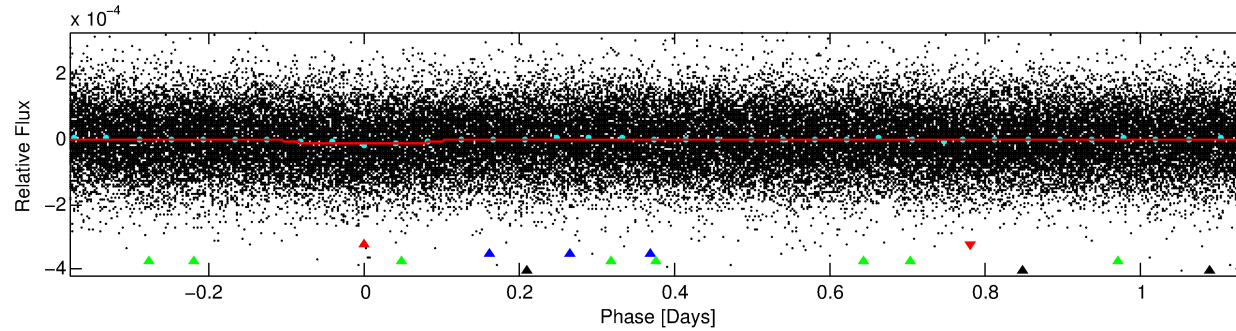
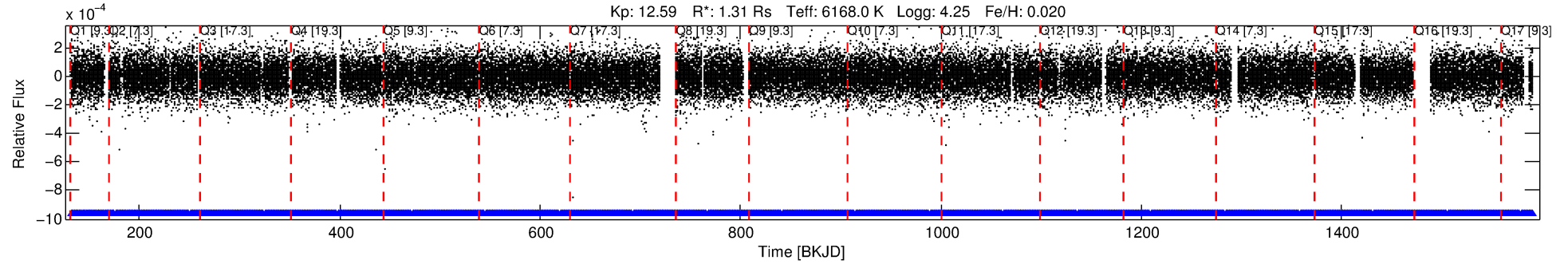
Ephemeris Match Information For 005529501-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005529501-01	5529501	005444392-pri	5444392	1:1	247.0	62	1	11.38	12.59	41160.00	Direct-PRF	0	0.39	0.24

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5529501 Candidate: 1 of 4 Period: 1.520 d
KOI: K06592.01 Corr: 0.774



DV Fit Results:

Period = 1.51952 [0.00002] d
Epoch = 132.5556 [0.0062] BKJD
Rp/R* = 0.0034 [0.0009]
a/R* = 1.46 [1.07]
b = 0.88 [0.36]
Seff = 3090.63 [716.15]
Teq = 1901 [110] K
Rp = 0.49 [0.16] Re
a = 0.0268 [0.0041] AU
Ag = 10.69 [6.71] [1.44σ]
Teffp = 5315 [782] K [4.32σ]

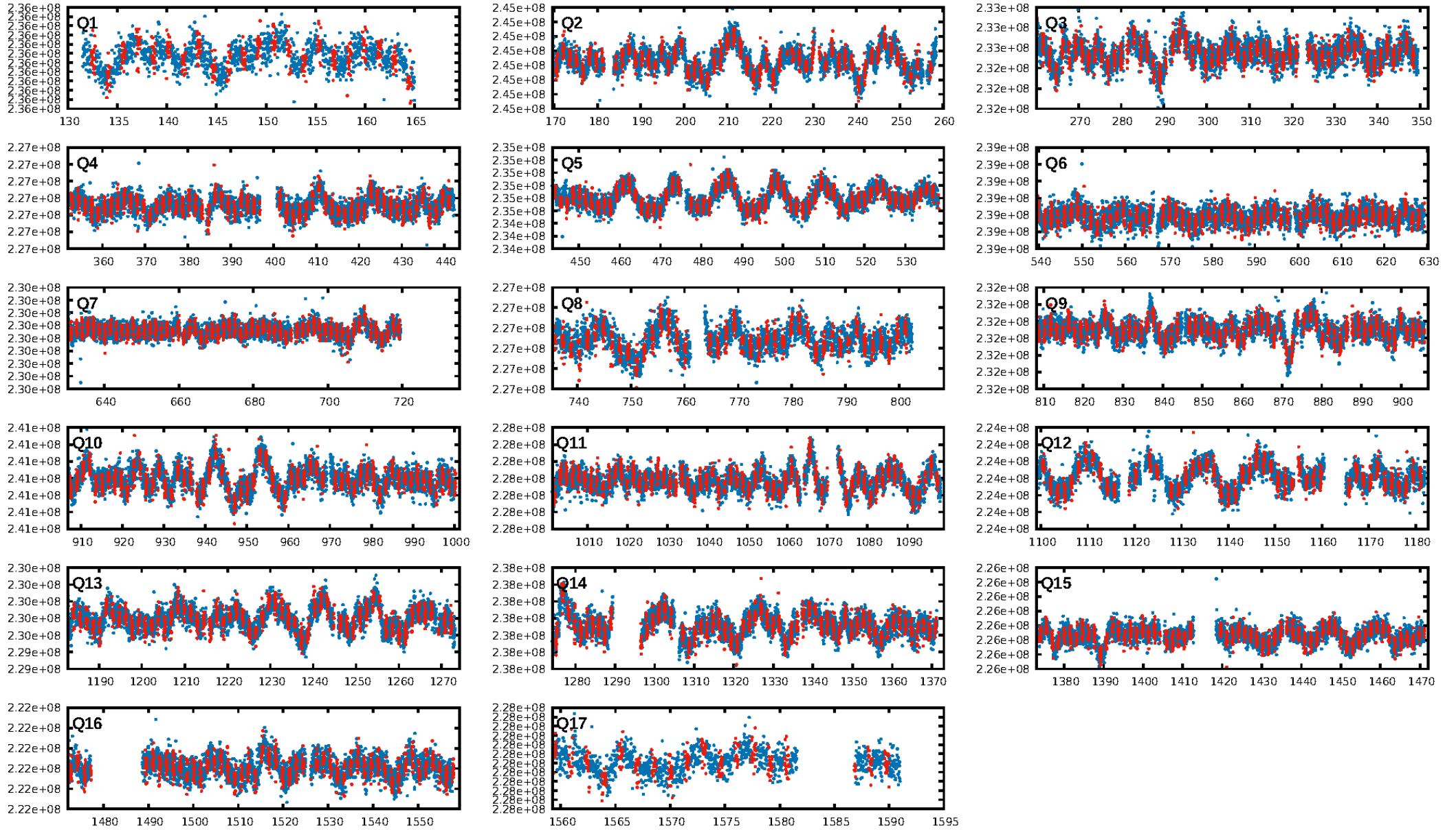
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [142.97σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.35e-15
RollingBand-fgt: 1.00 [845/845]
GhostDiagnostic-chr: 0.5936
Centroid-sig: 44.9%
Centroid-so: 0.860 arcsec [0.77σ]
OotOffset-rm: 1.003 arcsec [1.99σ]
KicOffset-rm: 1.100 arcsec [2.18σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 1.00 [17/17]

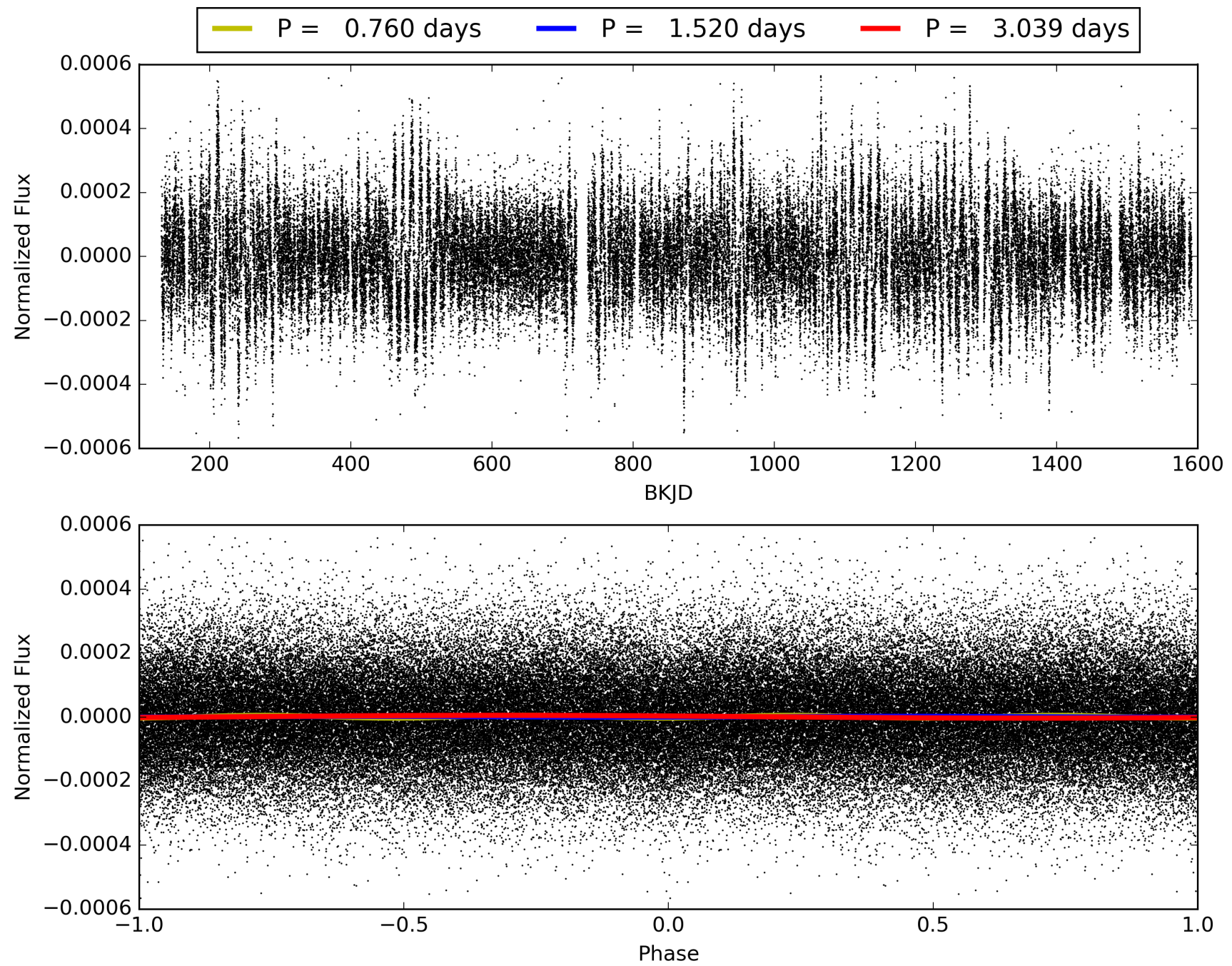
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:58:32 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005529501-01, PDC Light Curves

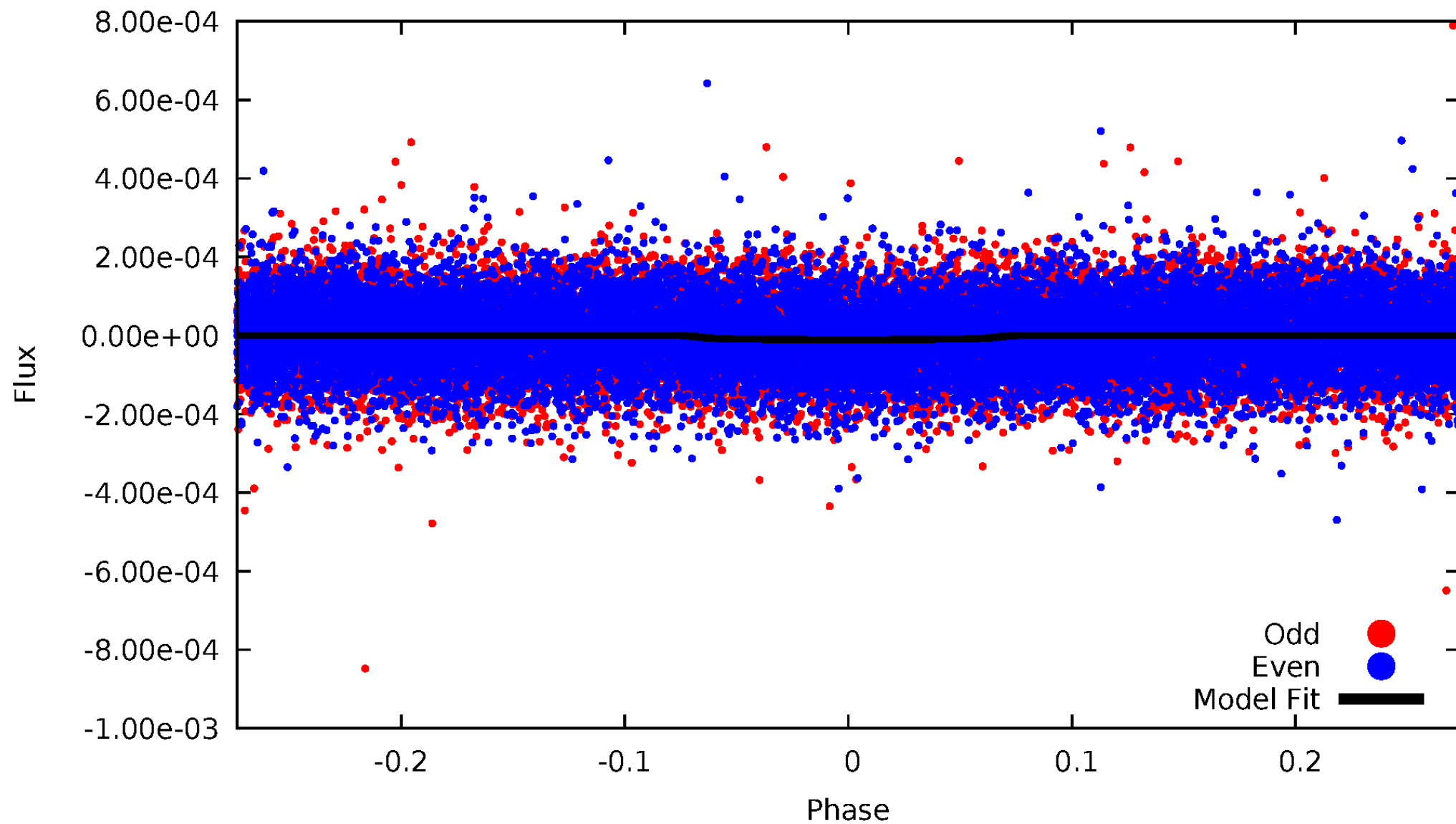


TCE 005529501-01



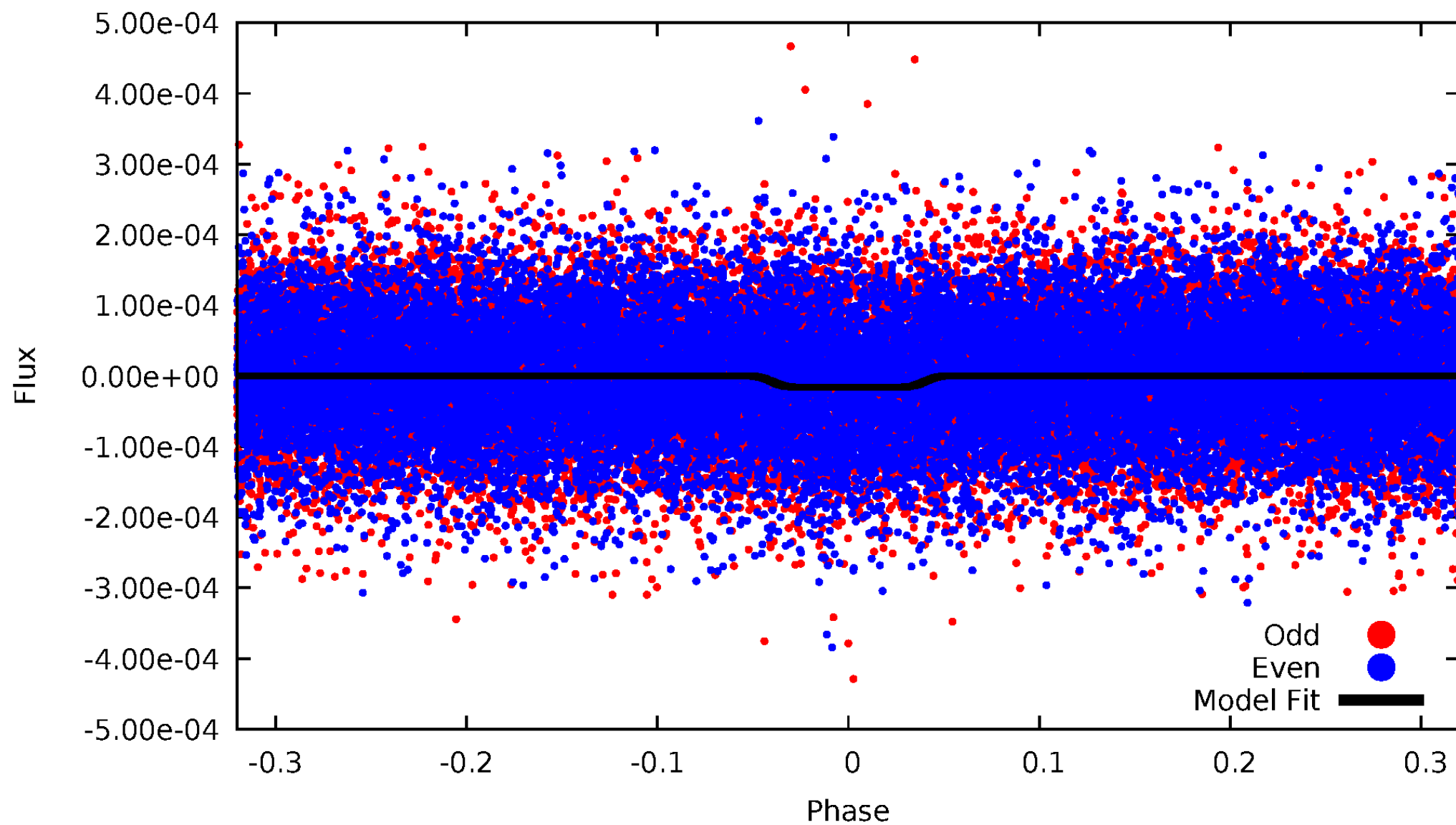
DV Odd/Even

TCE 005529501-01

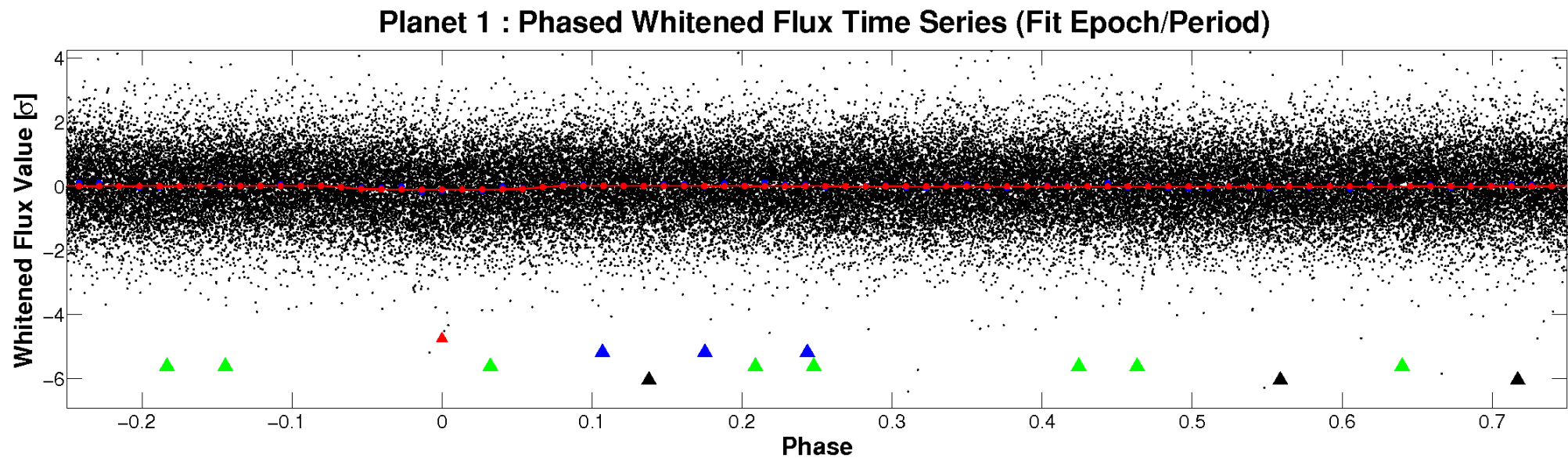
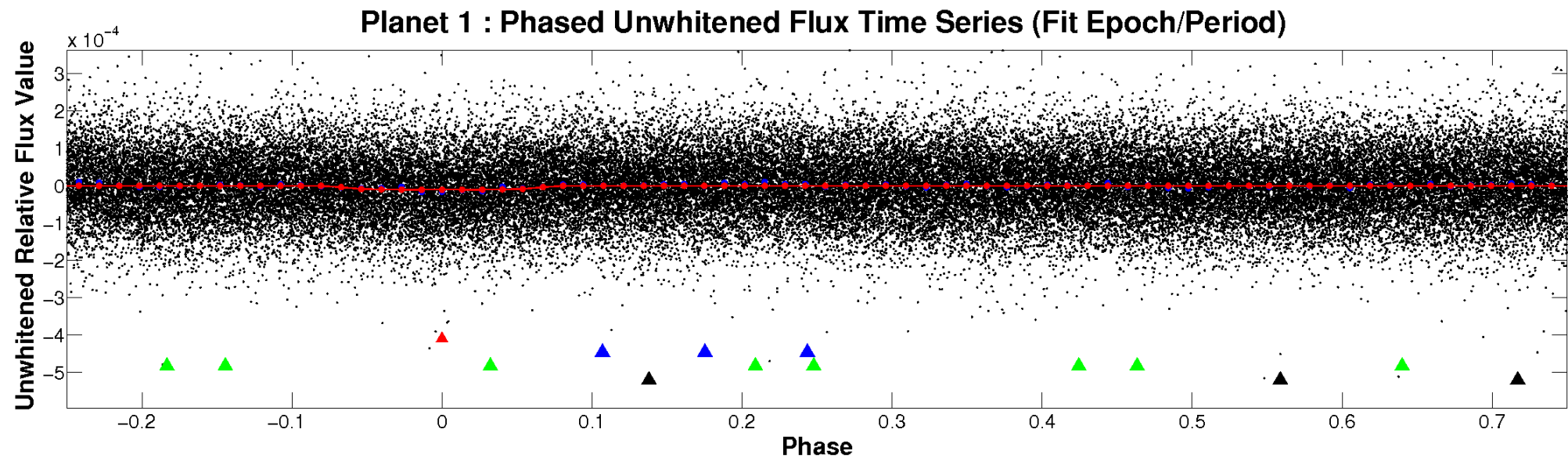


ALT Odd/Even

TCE 005529501-01

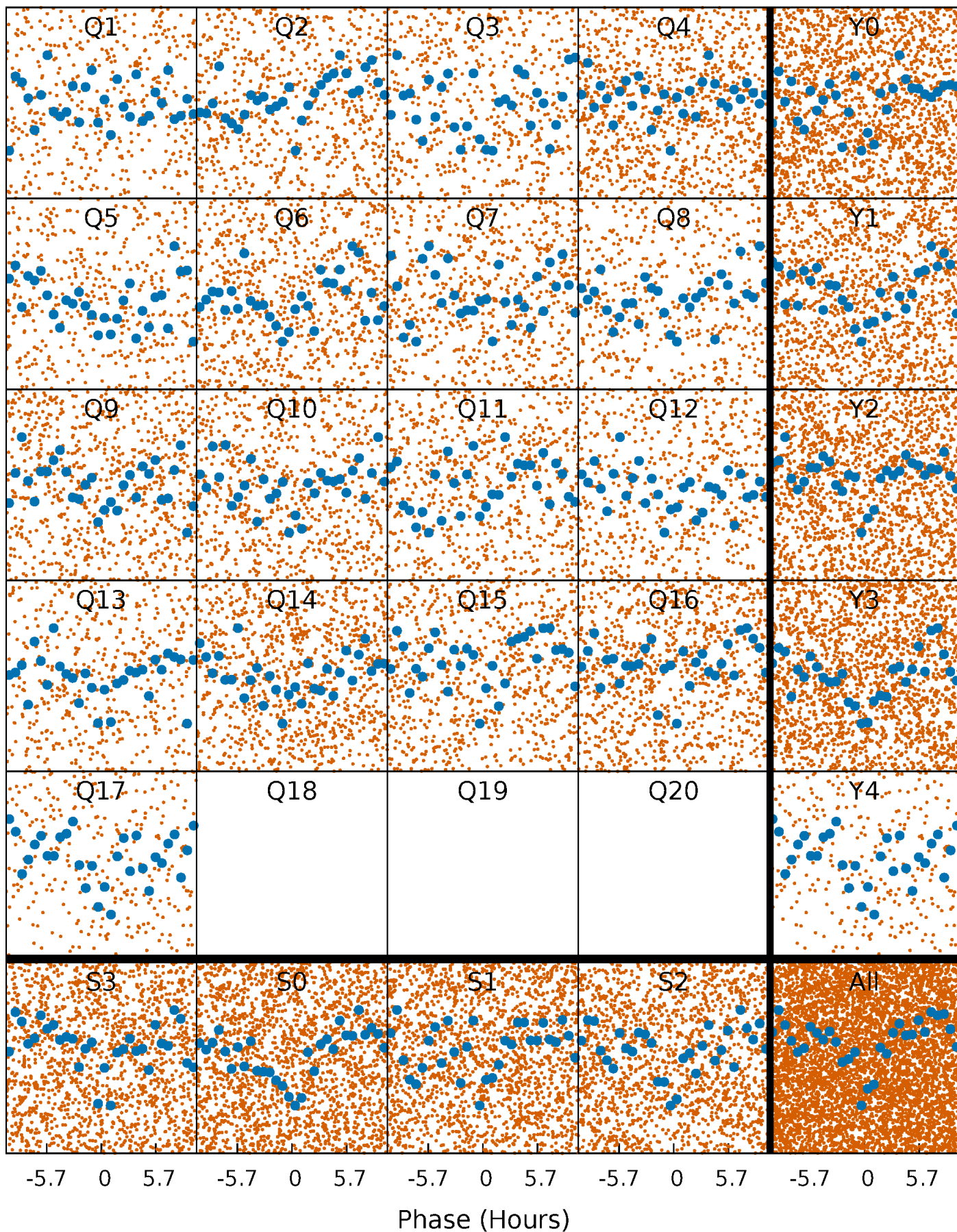


Non-Whitened Vs. Whitened Light Curve



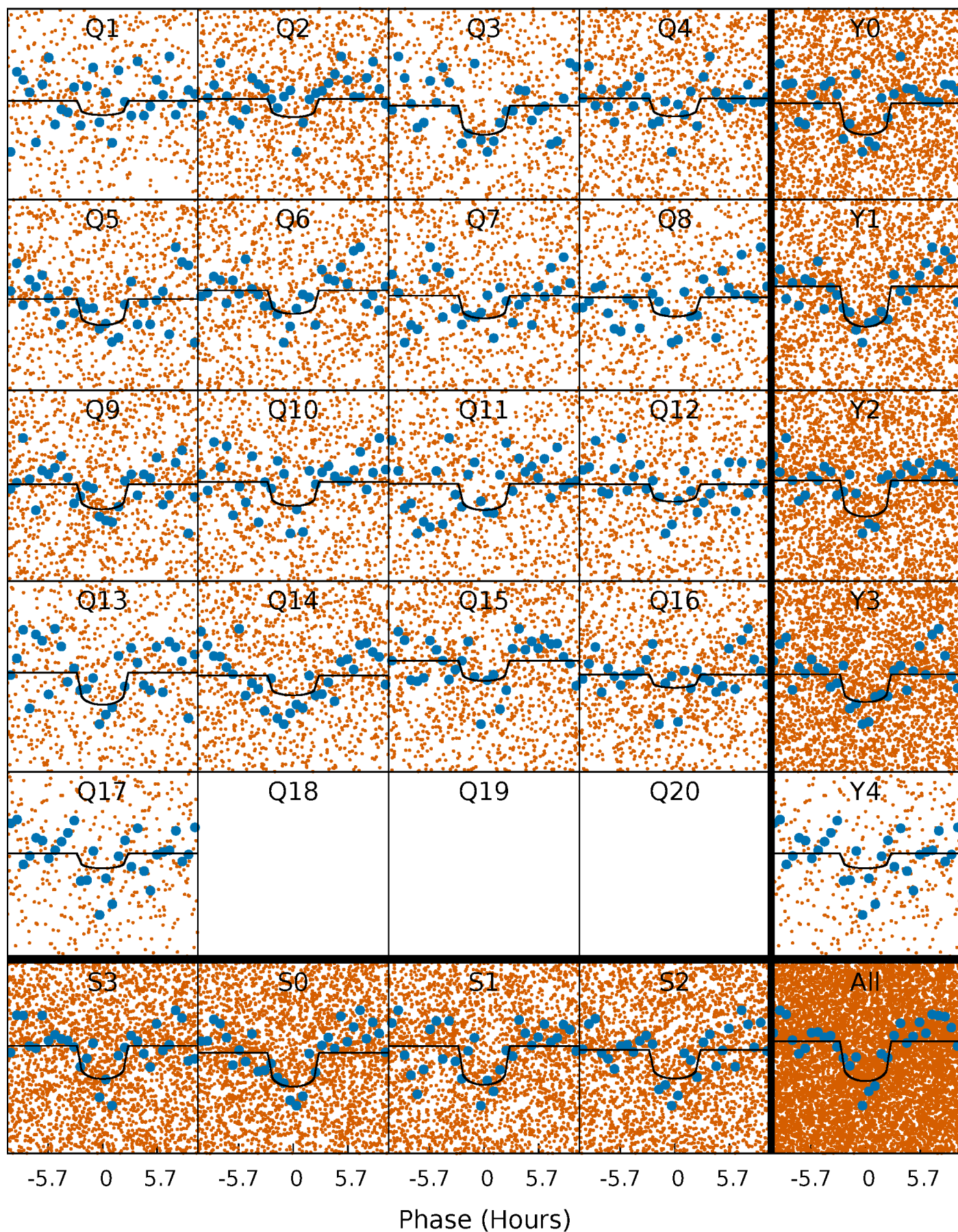
PDC Quarter-Phased Transit Curves

TCE 005529501-01 P= 1.519521 Days $T_0=132.555614$ (BKJD)



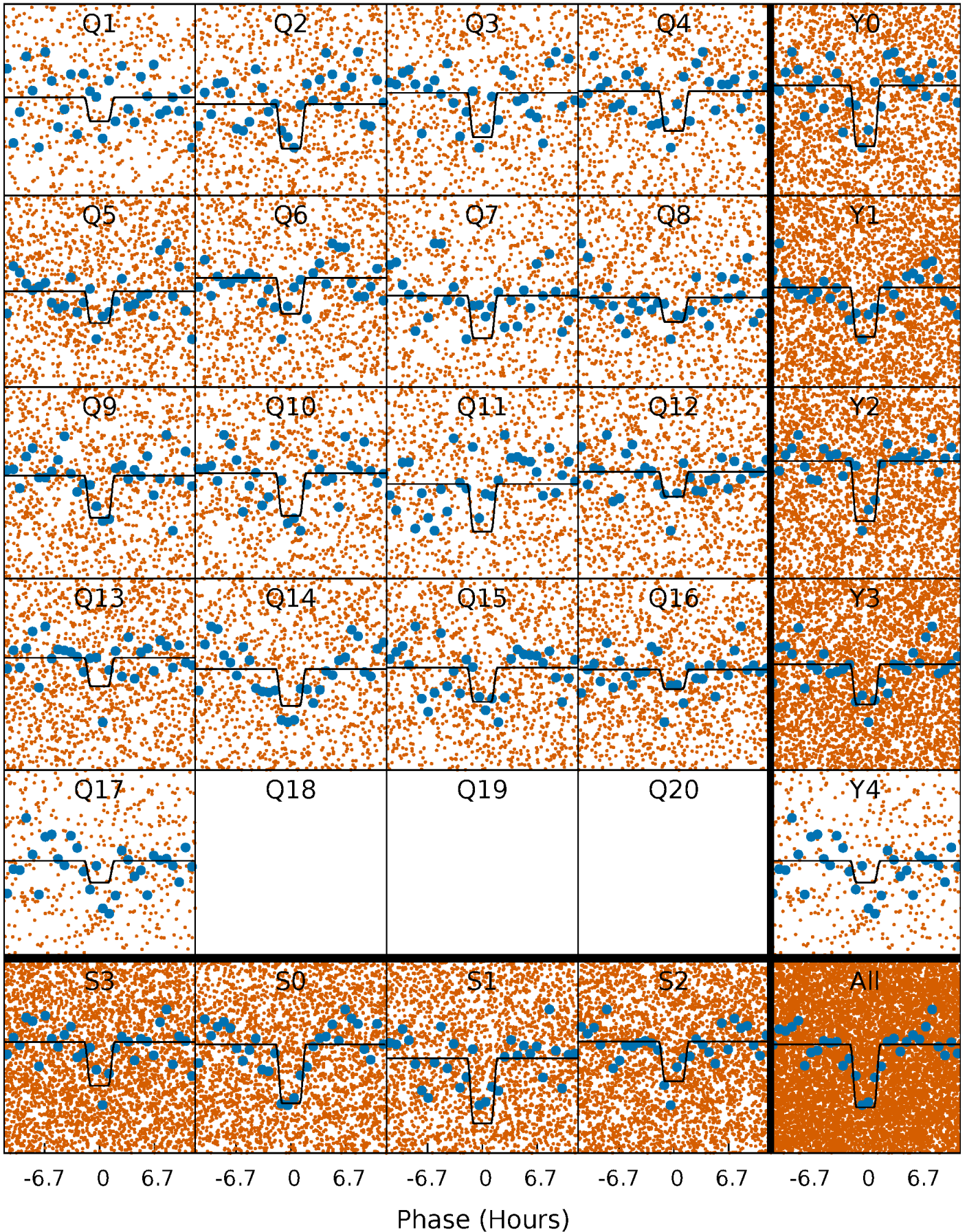
DV Quarter-Phased Transit Curves

TCE 005529501-01 P= 1.519521 Days $T_0=132.555614$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

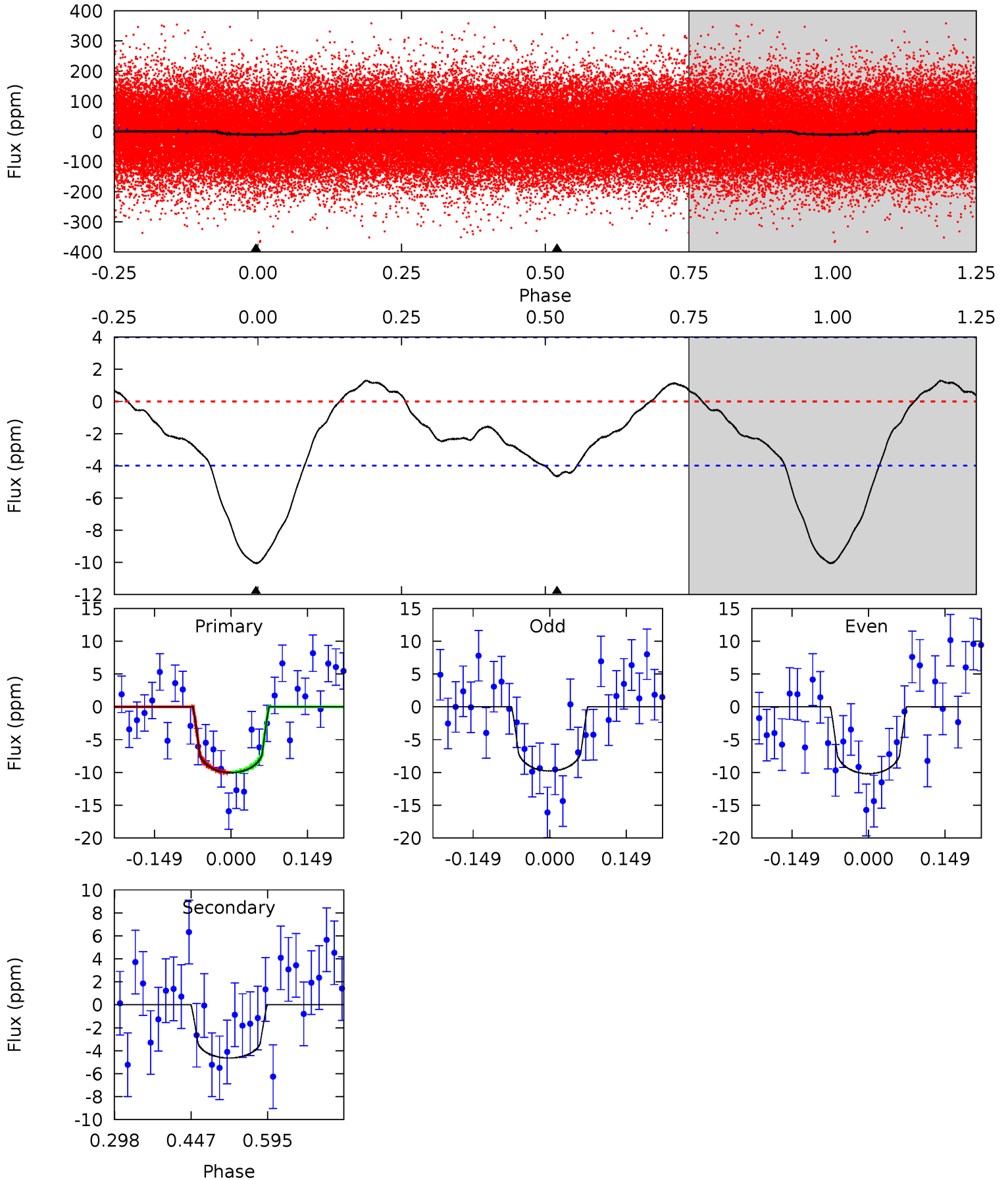
TCE 005529501-01 P= 1.519472 Days $T_0=132.580633$ (BKJD)



DV Model-Shift Uniqueness Test

005529501-01, P = 1.519521 Days, E = 131.036093 Days

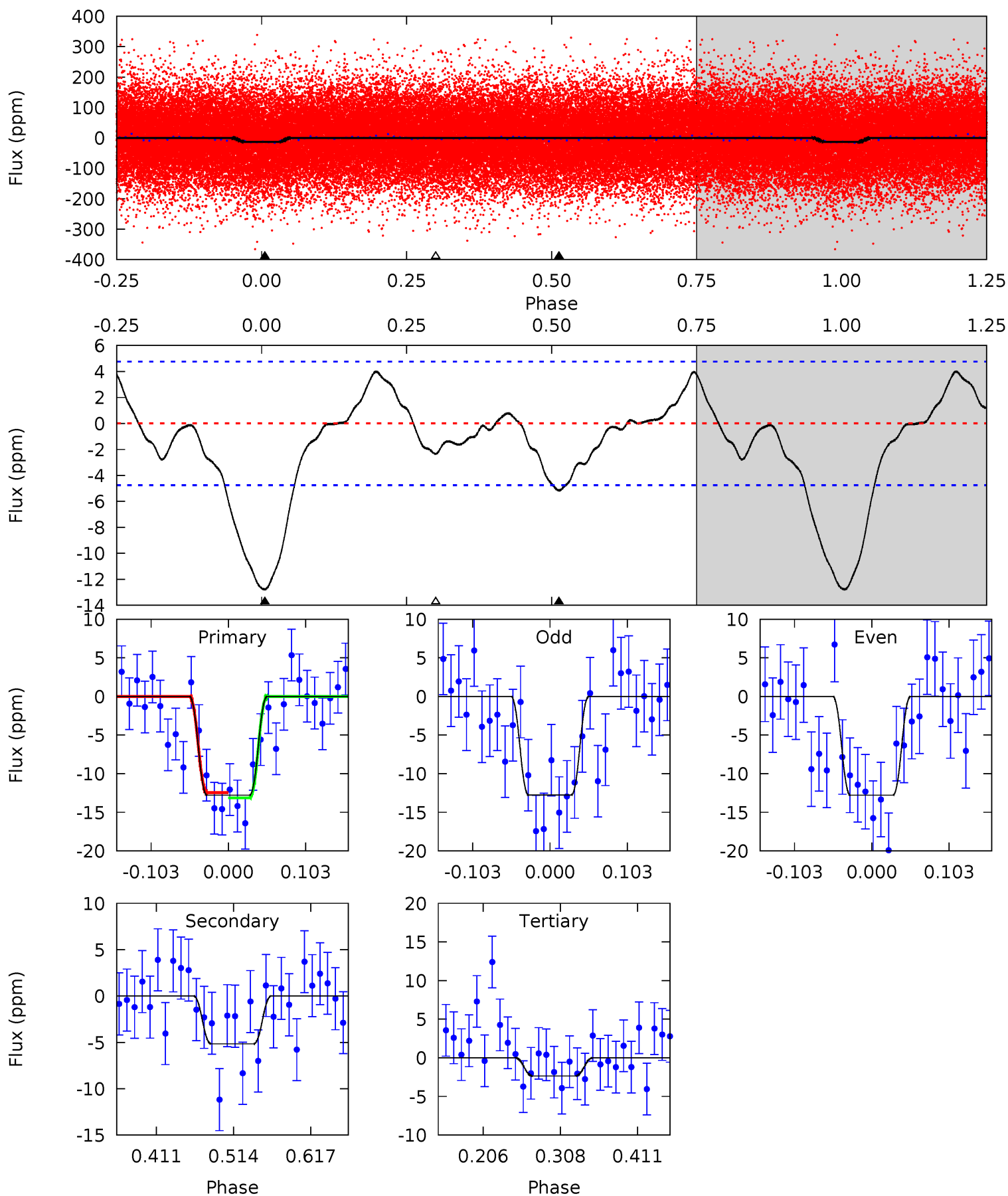
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	5.22	0	0	4.48	1.44	1.41	11.3	11.3	5.22	5.22	0.24	0.91	0.11	0.03



Alt Model-Shift Uniqueness Test

005529501-01, P = 1.519472 Days, E = 131.061161 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	4.95	2.25	0	4.56	1.63	1.65	9.99	12.2	2.69	4.95	0.01	1.09	0.24	0.32



Stellar Parameters For KIC 005529501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6168^{+80}_{-86}	$4.250^{+0.125}_{-0.125}$	$0.020^{+0.150}_{-0.150}$	$1.307^{+0.230}_{-0.188}$	$1.105^{+0.113}_{-0.066}$	$0.697^{+0.391}_{-0.252}$
	+1%/-1%	+3%/-3%	+750%/-750%	+18%/-14%	+10%/-6%	+56%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005529501-01 / KOI 6592.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 1	$0.49^{+0.14}_{-0.14}$	2663^{+130}_{-118}	4939^{+829}_{-531}	$7.603^{+7.565}_{-3.331}$
Alt.	-5 ± 1	$0.56^{+0.14}_{-0.14}$	2646^{+122}_{-112}	4753^{+606}_{-447}	$6.576^{+5.201}_{-2.716}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

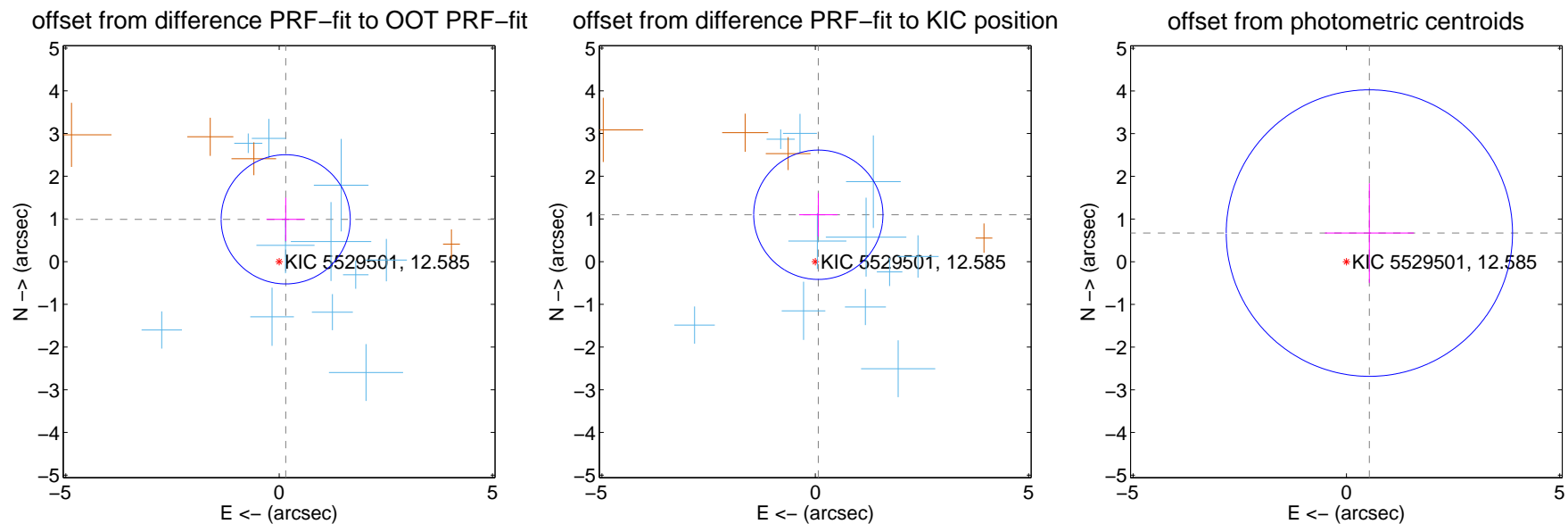
DV Centroid Data

Supplemental centroid analysis for 005529501-01. Kepler magnitude: 12.59. Transit SNR 7.87

There are 11 quarters with good PRF difference image offsets

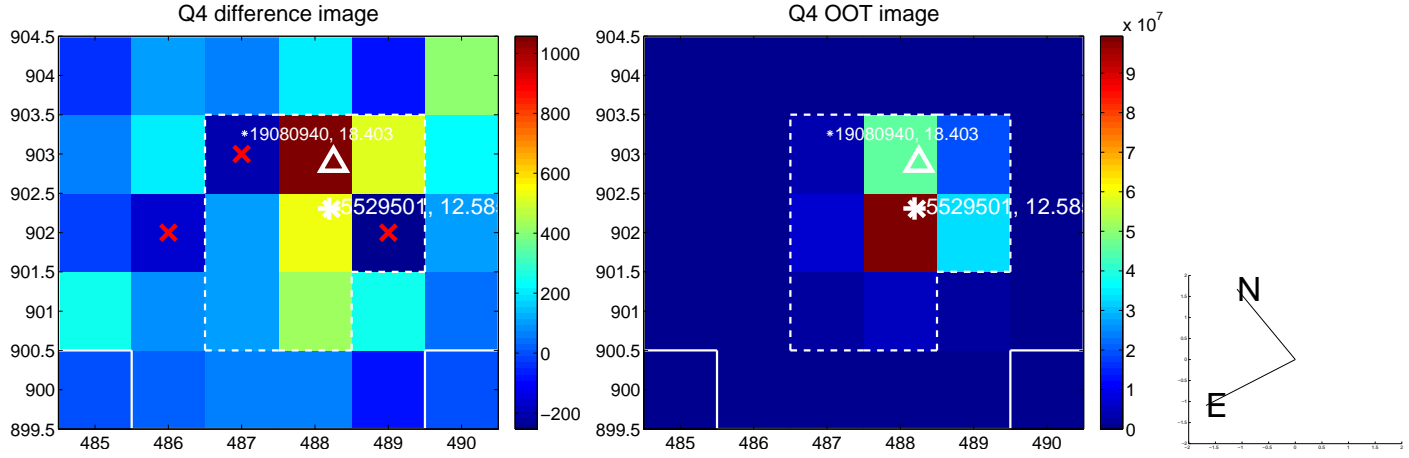
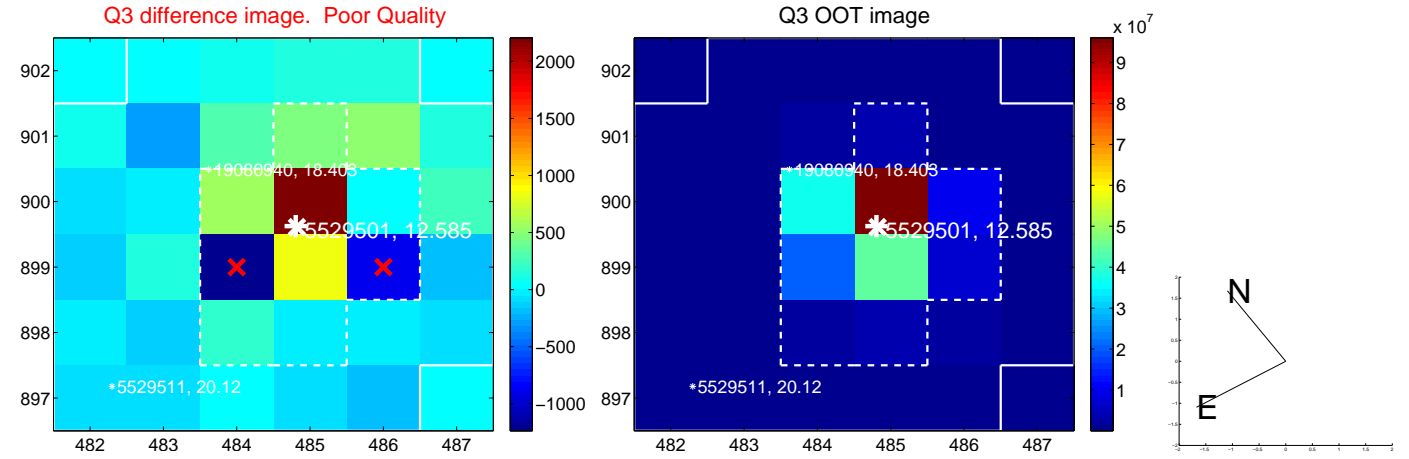
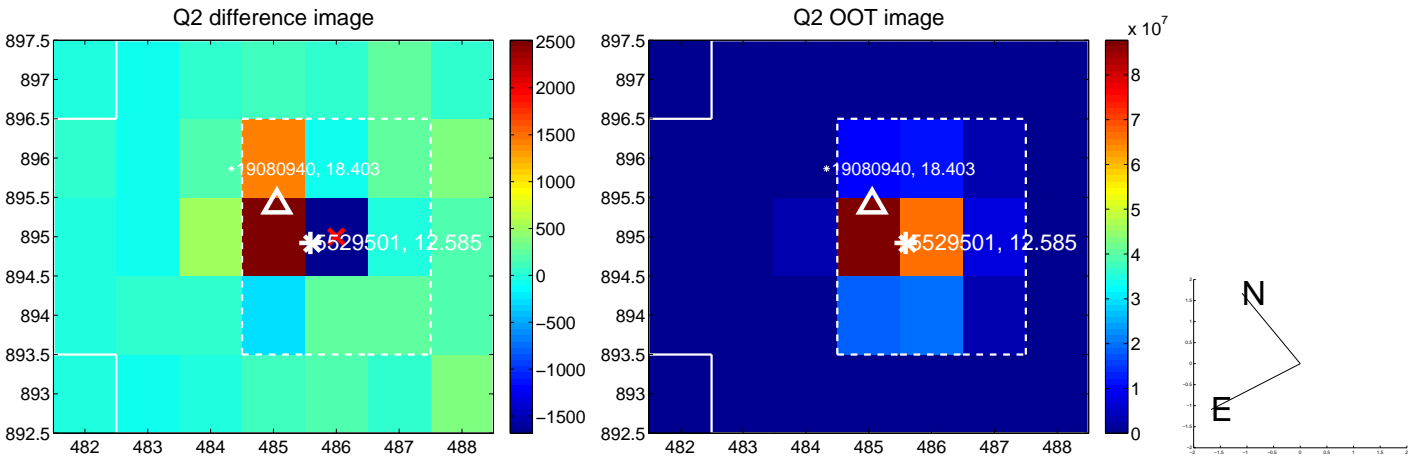
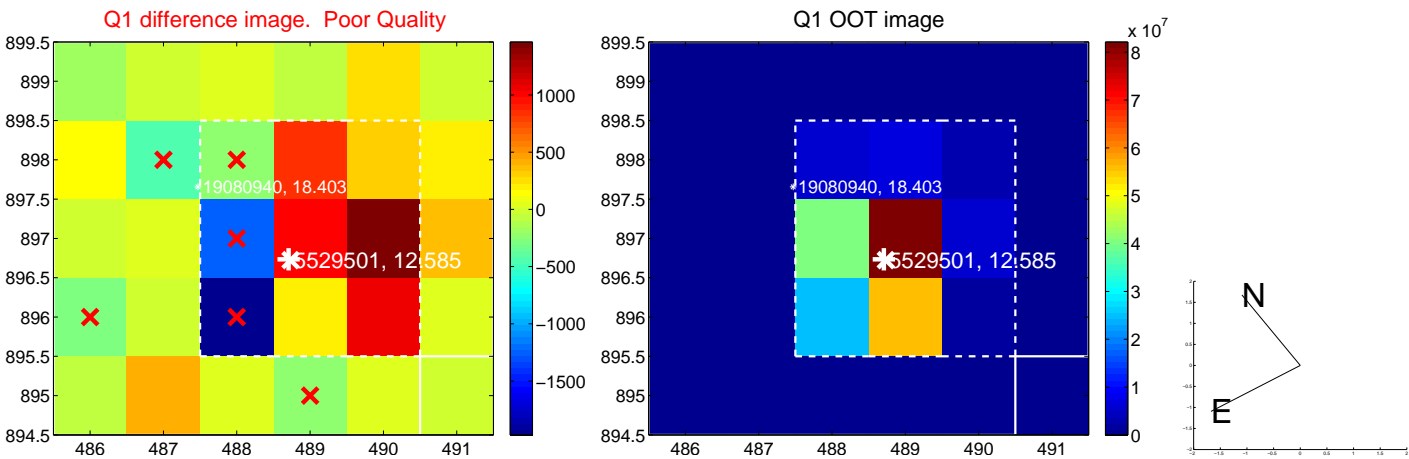
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.003 ± 0.504	1.99	-0.154 ± 0.451	0.991 ± 0.506
PRF-fit source offset from KIC position	1.100 ± 0.505	2.18	-0.072 ± 0.450	1.098 ± 0.505
photometric centroid source offset	0.86 ± 1.12	0.77	-0.54 ± 1.04	0.67 ± 1.16

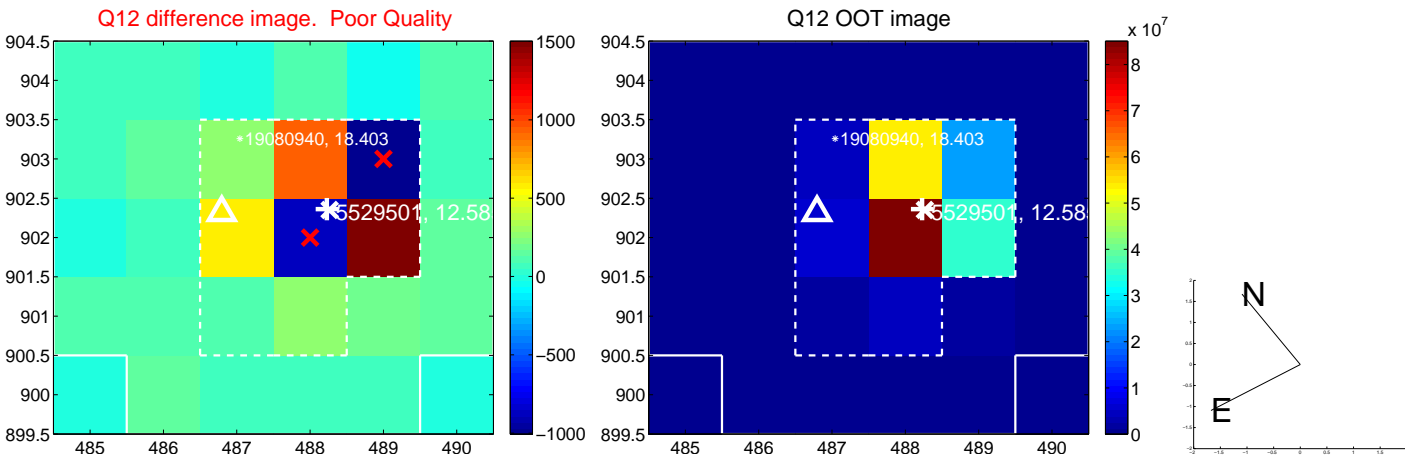
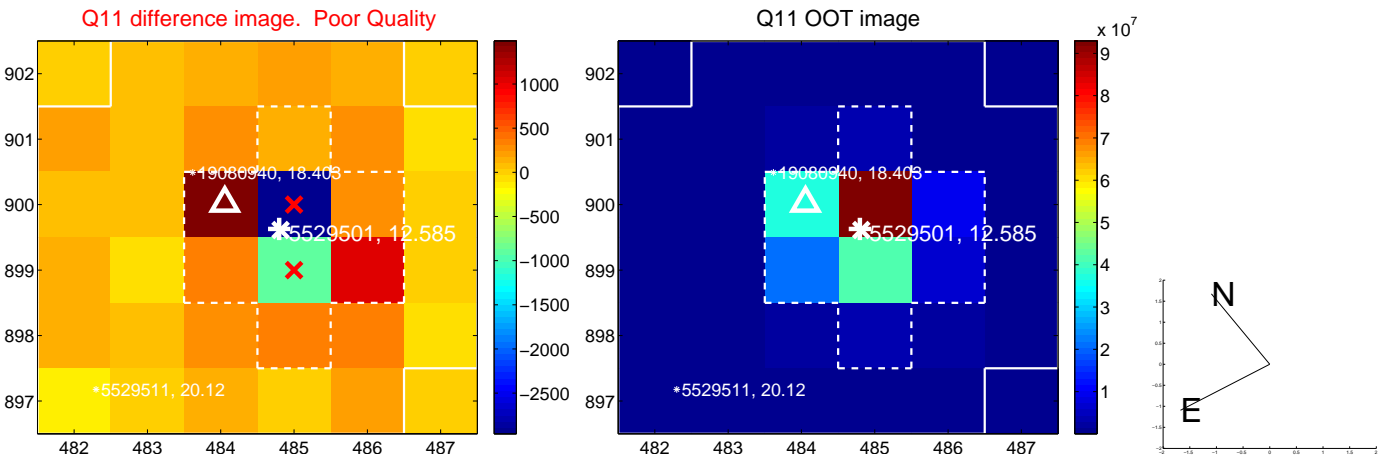
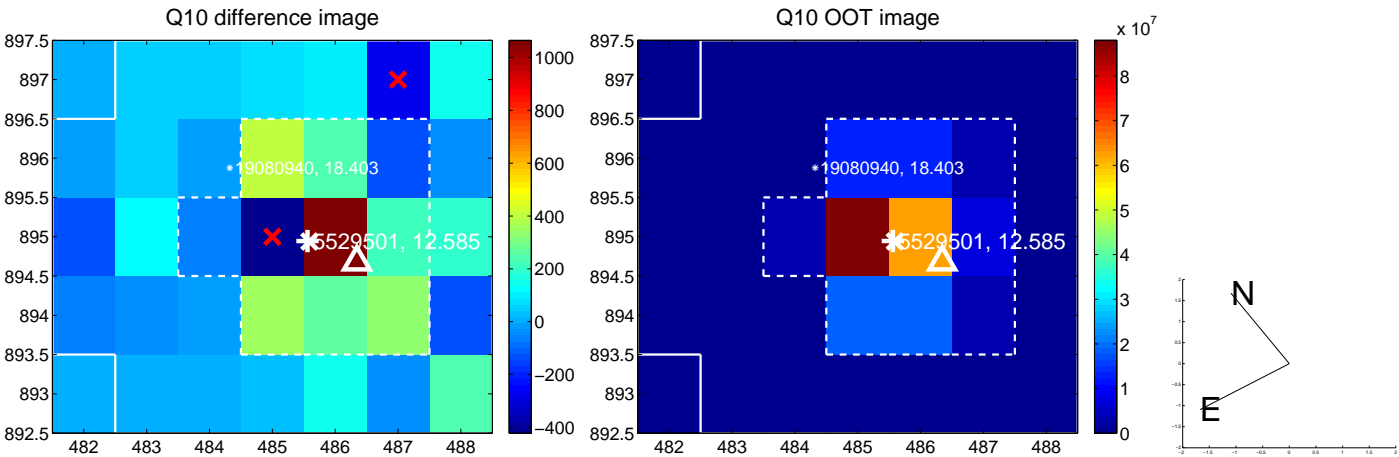
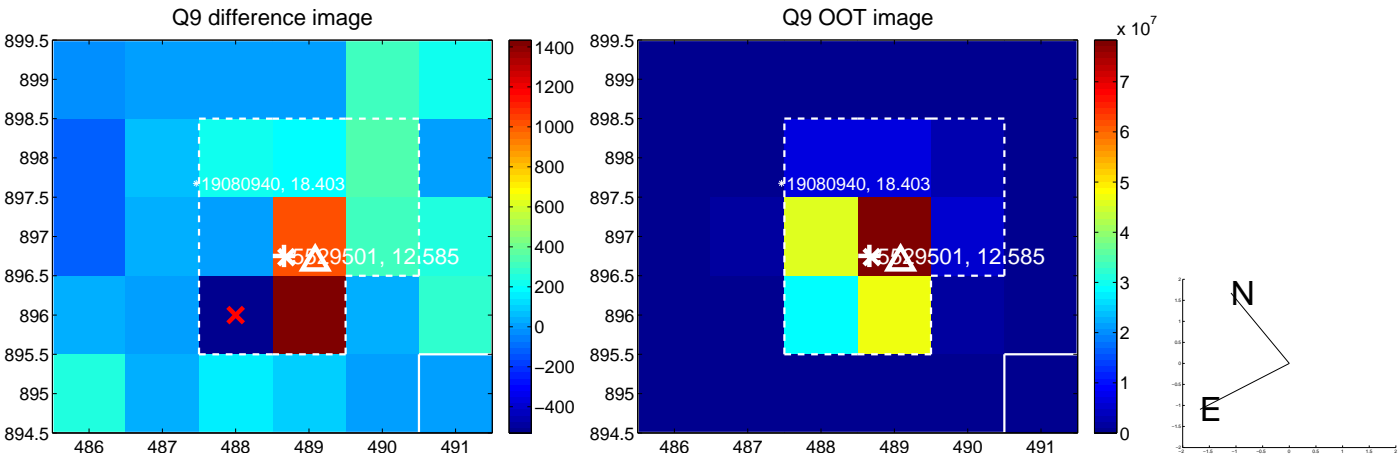


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

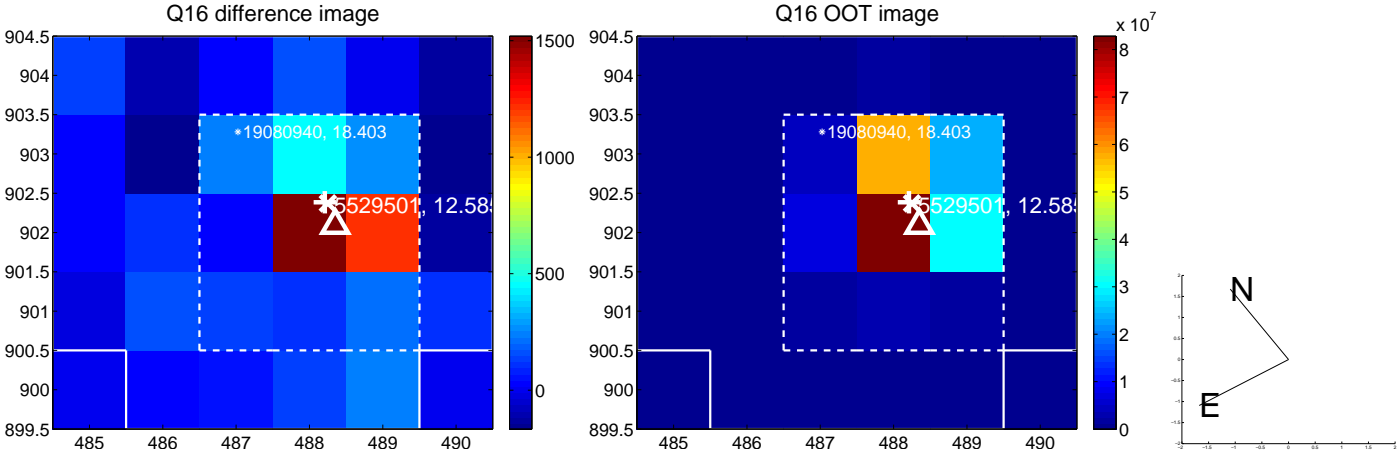
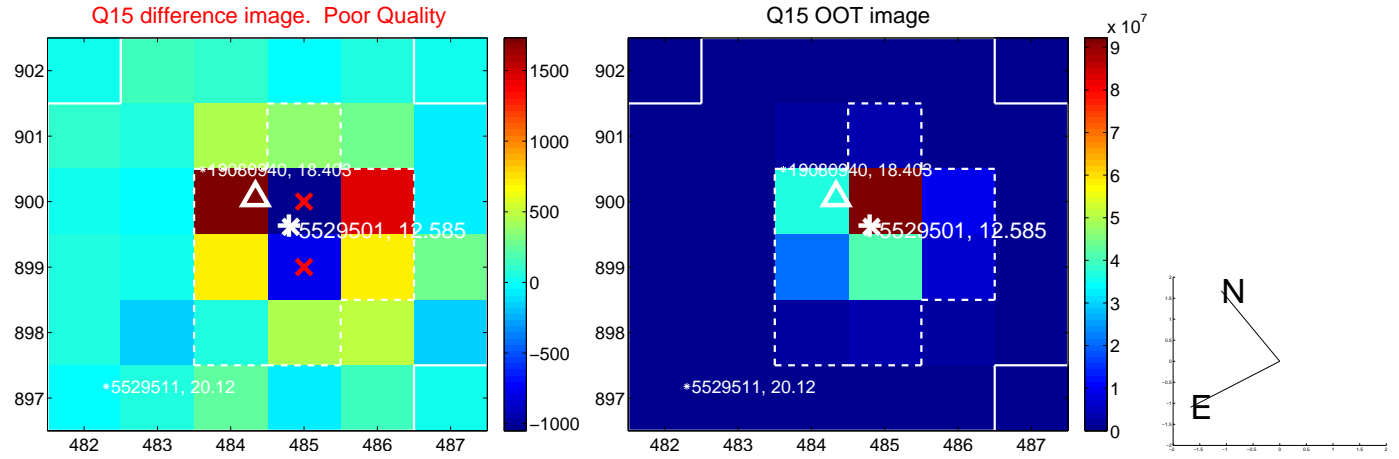
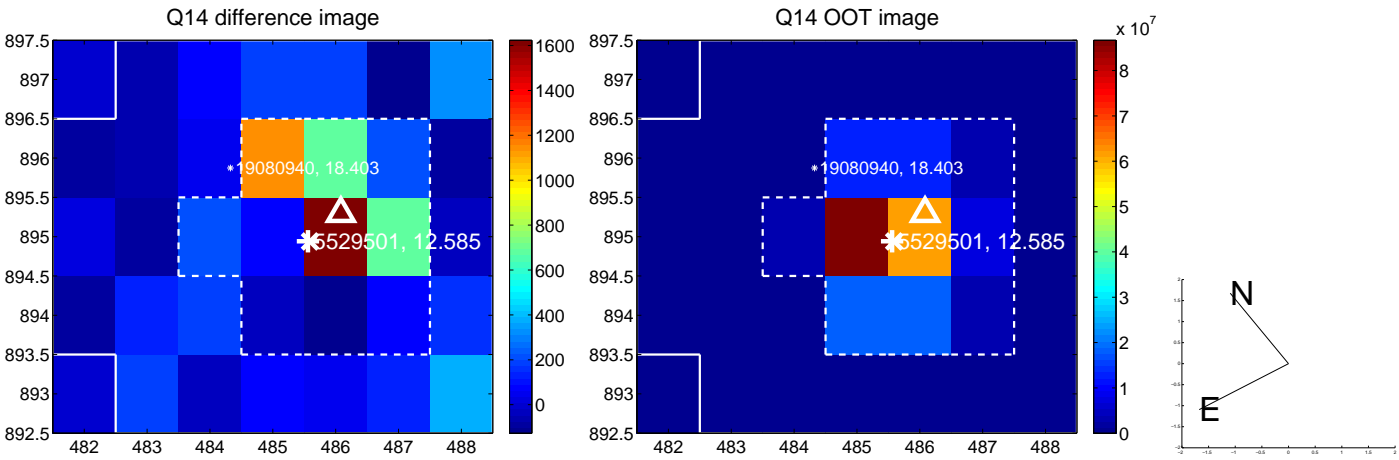
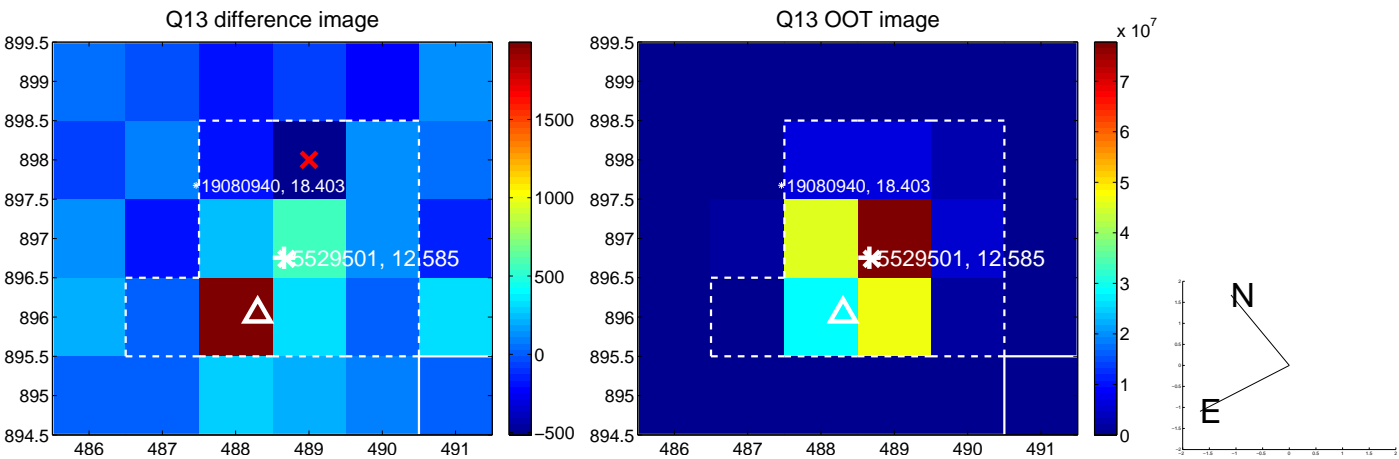
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



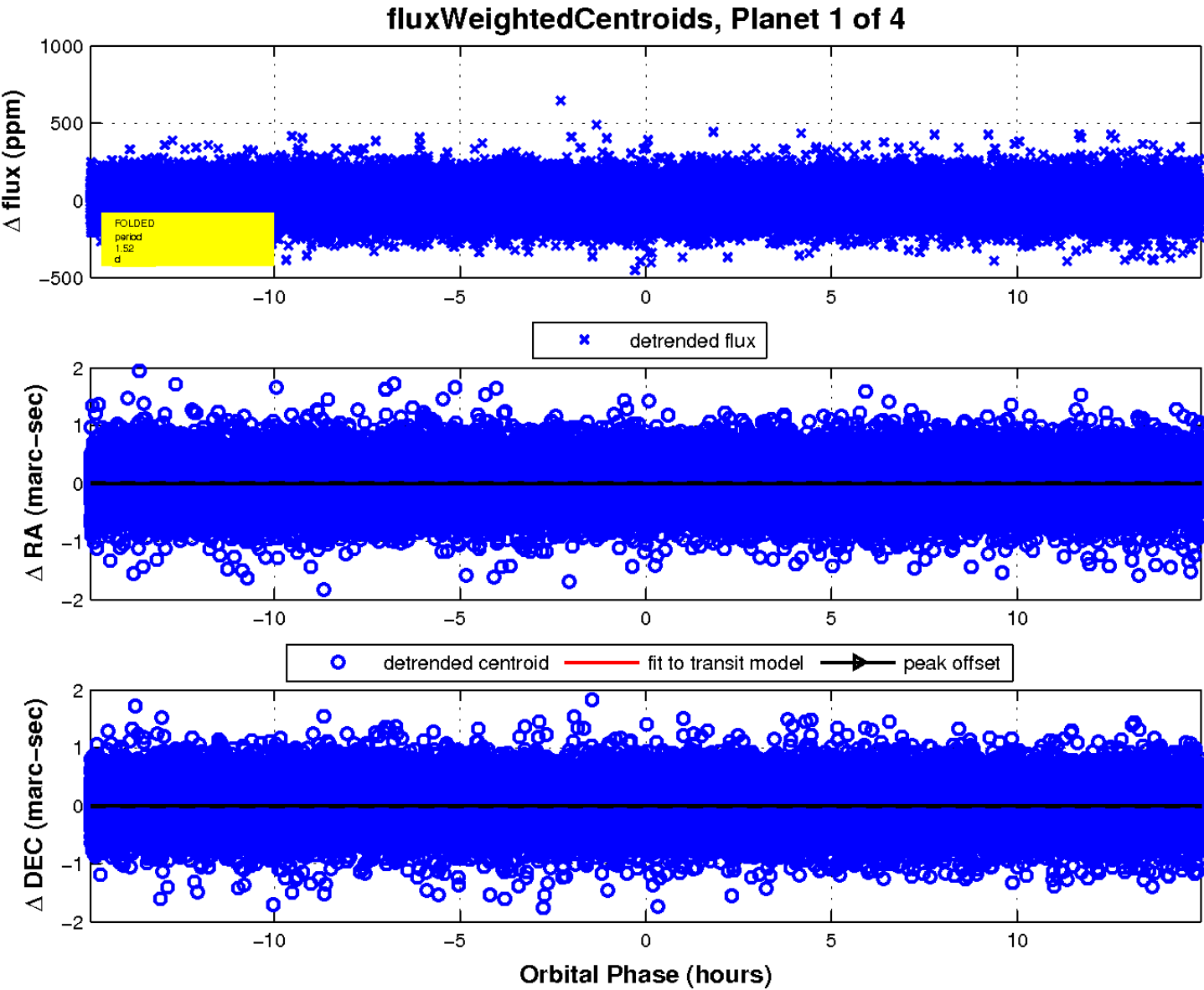
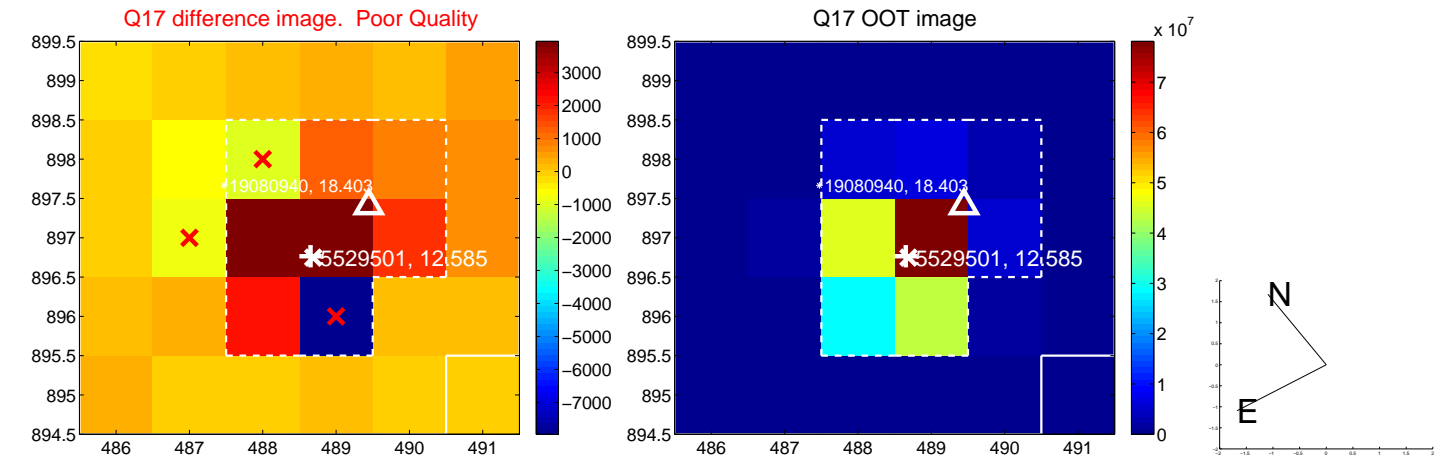
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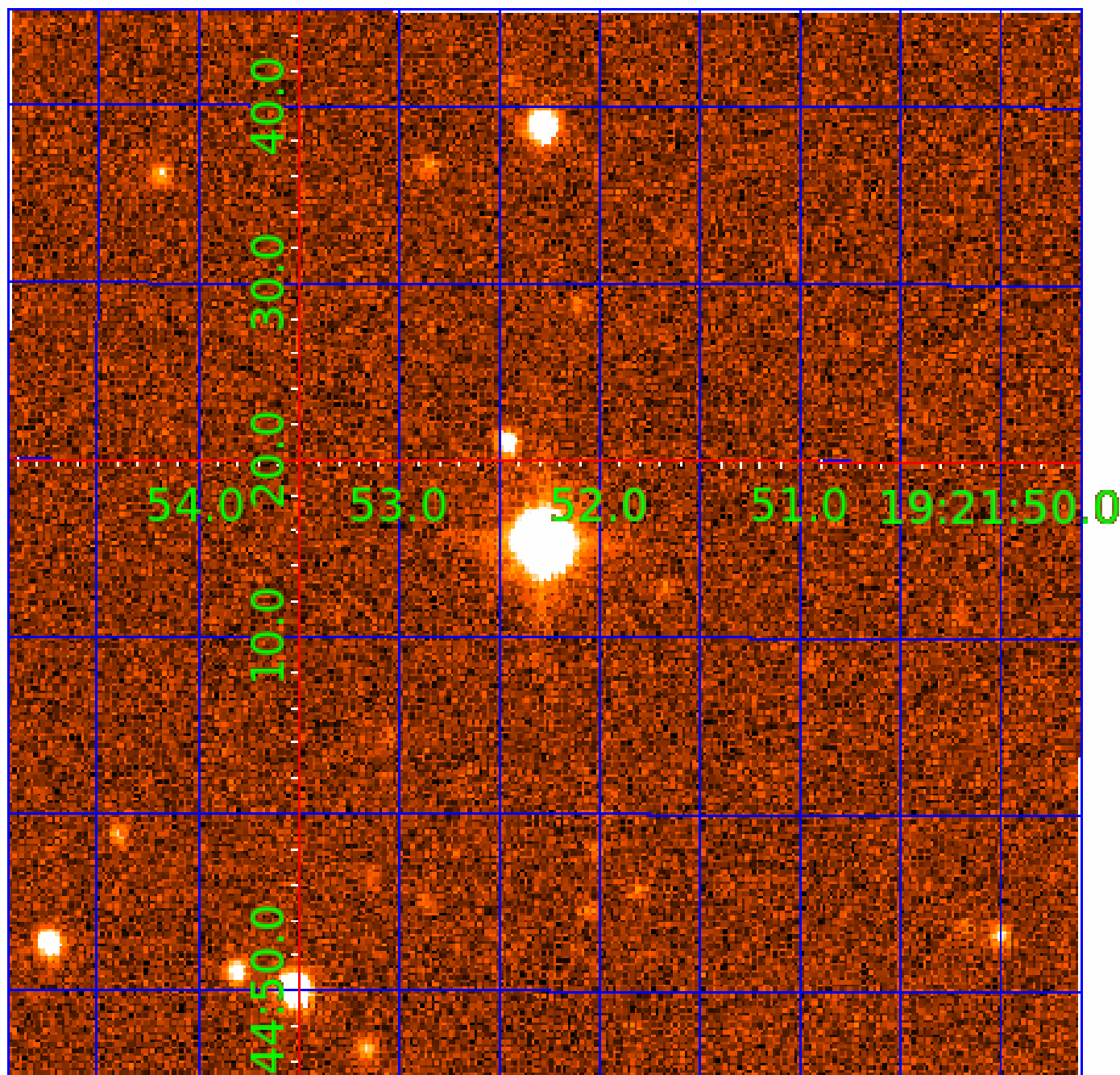


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005529501

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005529501-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

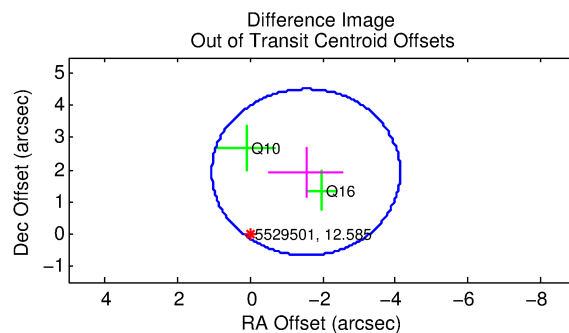
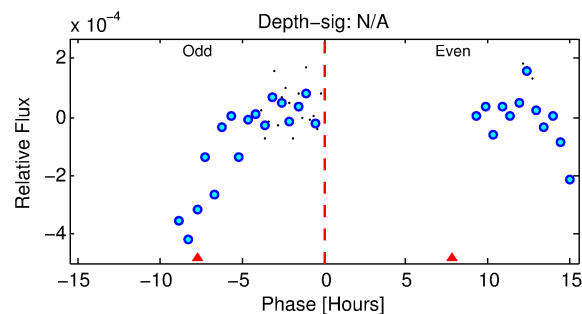
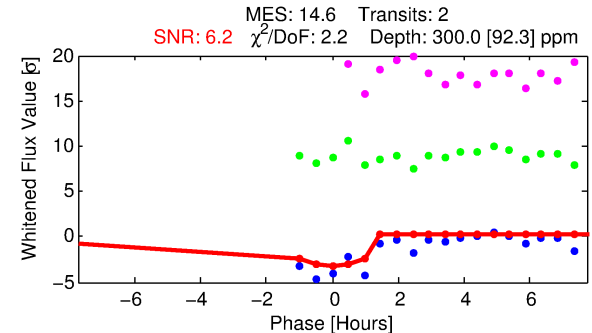
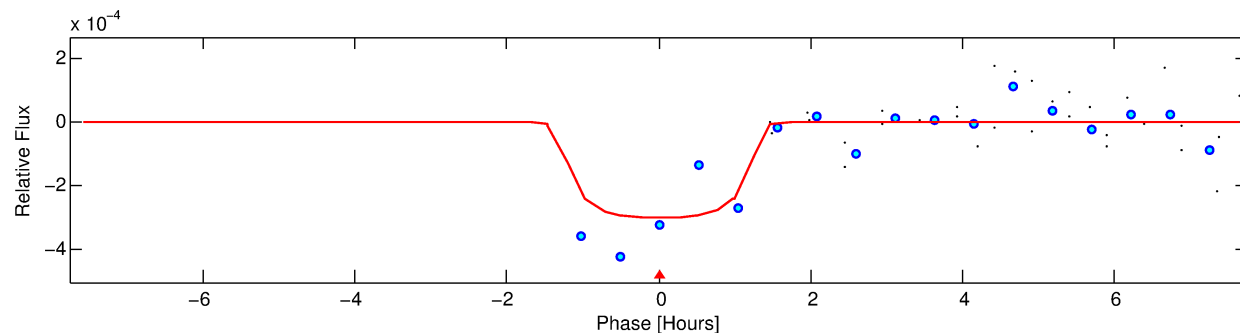
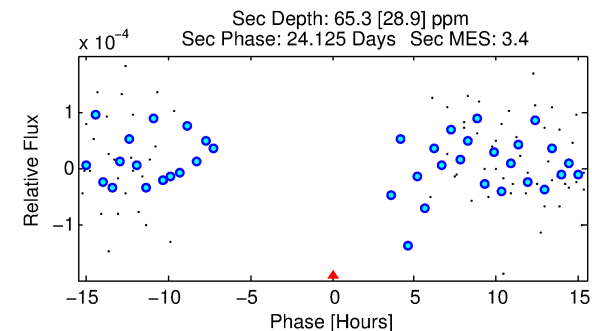
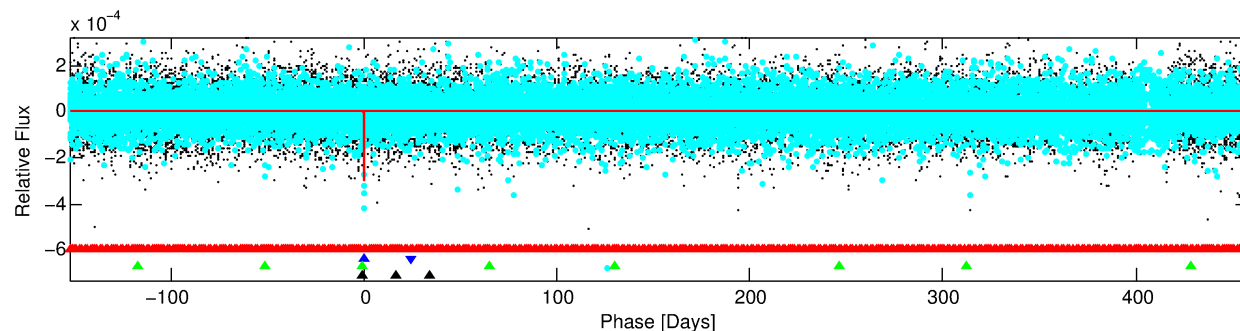
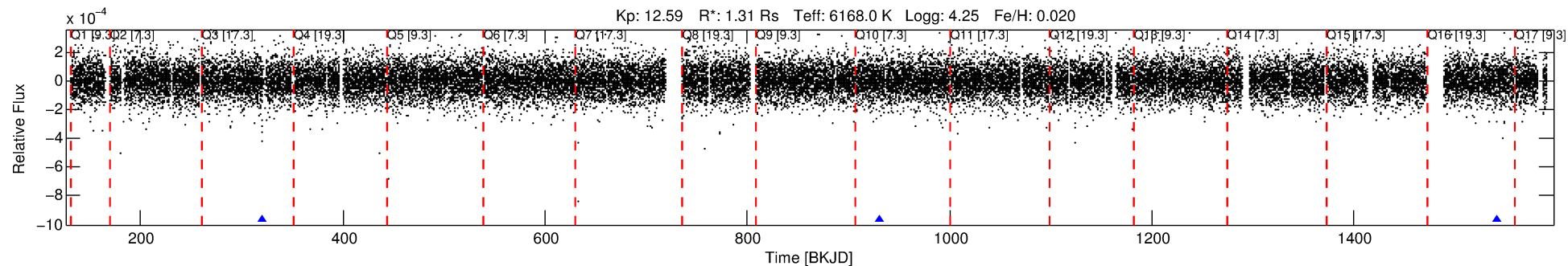
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005529501-02

No Significant Match Found

DV One-Page Summary

KIC: 5529501 Candidate: 2 of 4 Period: 610.744 d
KOI: K06592 Corr: No Ephemeris Match



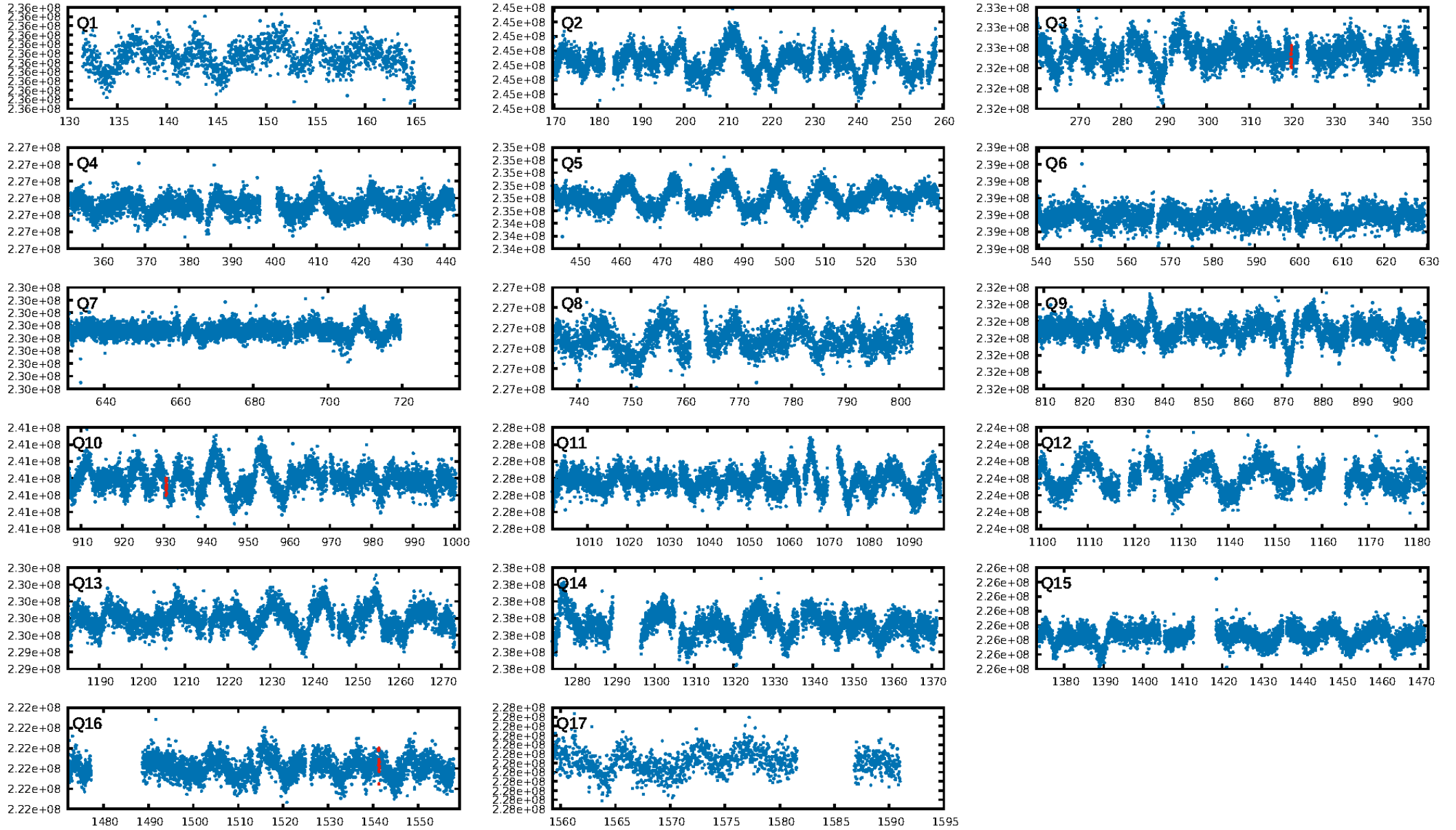
DV Fit Results:

Period = 610.74361 [0.07262] d
Epoch = 319.8268 [0.0143] BKJD
Rp/R* = 0.0175 [0.0644]
a/R* = 1170.02 [21641.74]
b = 0.78 [9.07]
Seff = 1.04 [0.24]
Teq = 258 [15] K
Rp = 2.49 [9.19] Re
a = 1.4581 [0.2210] AU
Ag = 12304.38 [90901.24] [0.14σ]
Teffp = 4195 [7745] K [0.51σ]

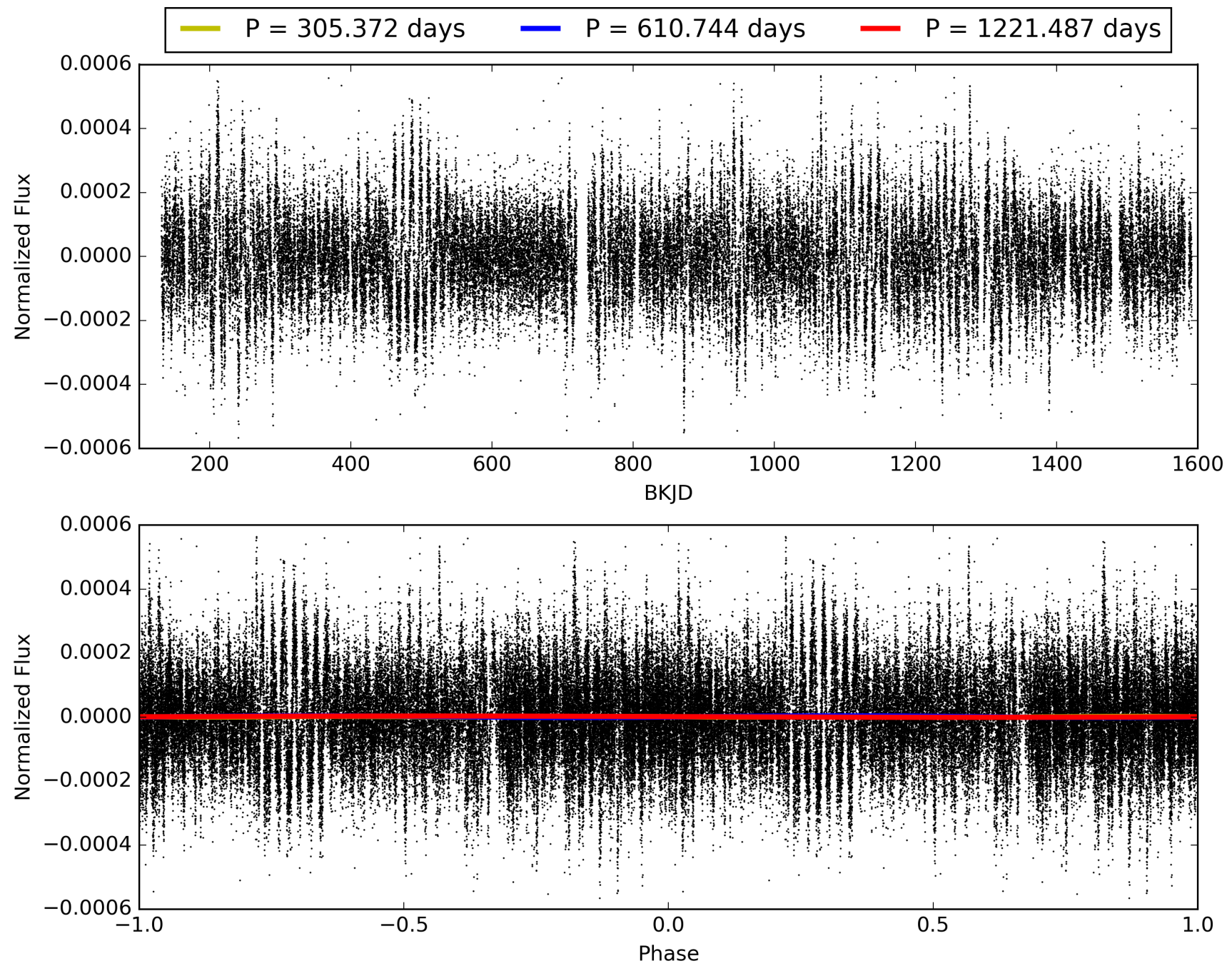
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [343.74σ]
LongPeriod-sig: 100.0% [65.10σ]
ModelChiSquare2-sig: 84.9%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 1.85e-37
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -1.37
Centroid-sig: 25.0%
Centroid-so: 0.862 arcsec [0.93σ]
OotOffset-rm: 2.462 arcsec [2.85σ]
KicOffset-rm: 2.505 arcsec [3.02σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/3]

TCE 005529501-02, PDC Light Curves

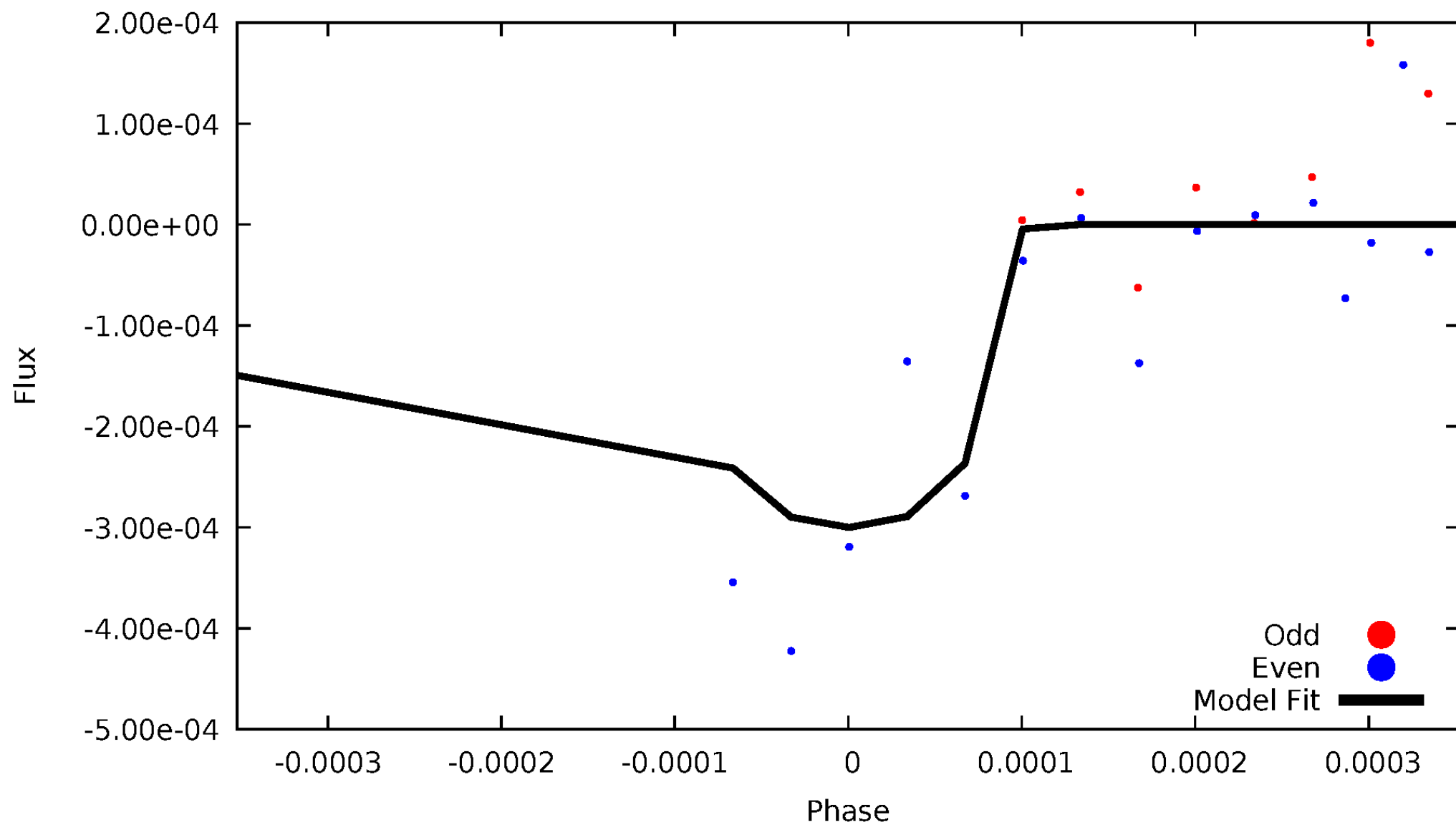


TCE 005529501-02



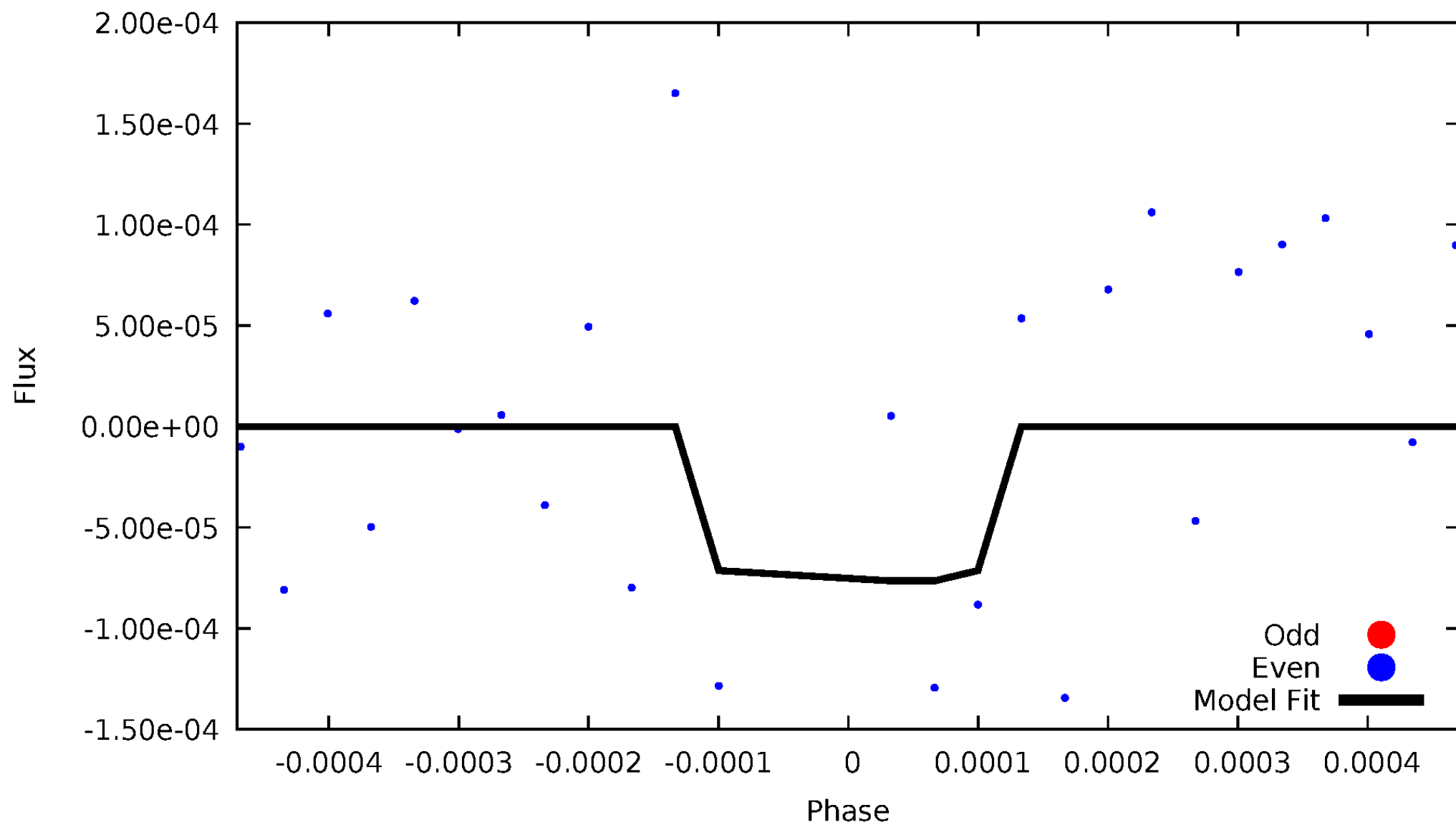
DV Odd/Even

TCE 005529501-02



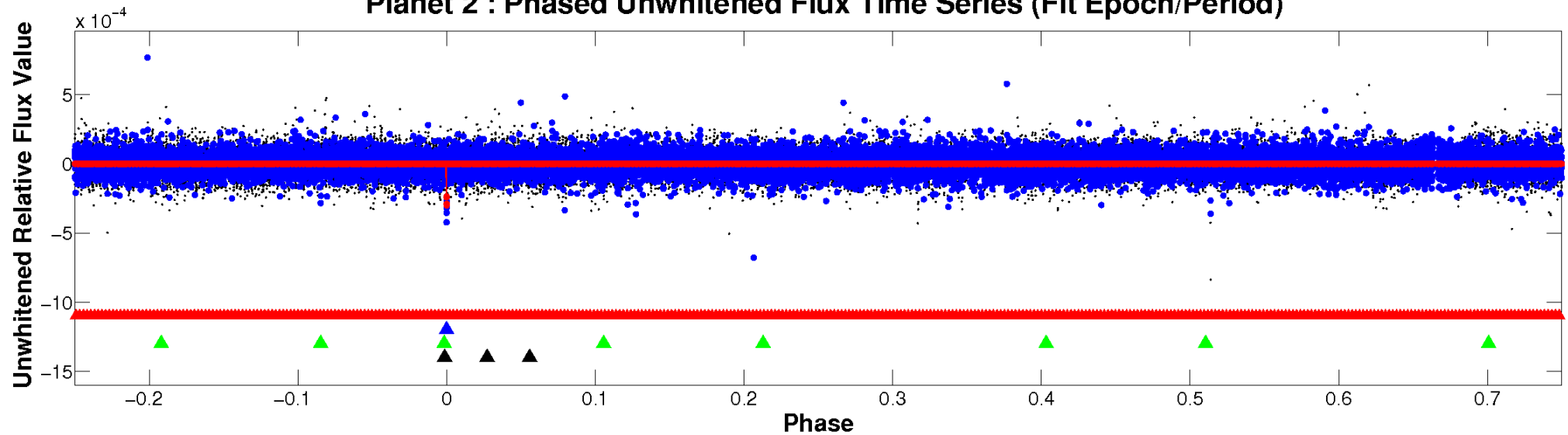
ALT Odd/Even

TCE 005529501-02

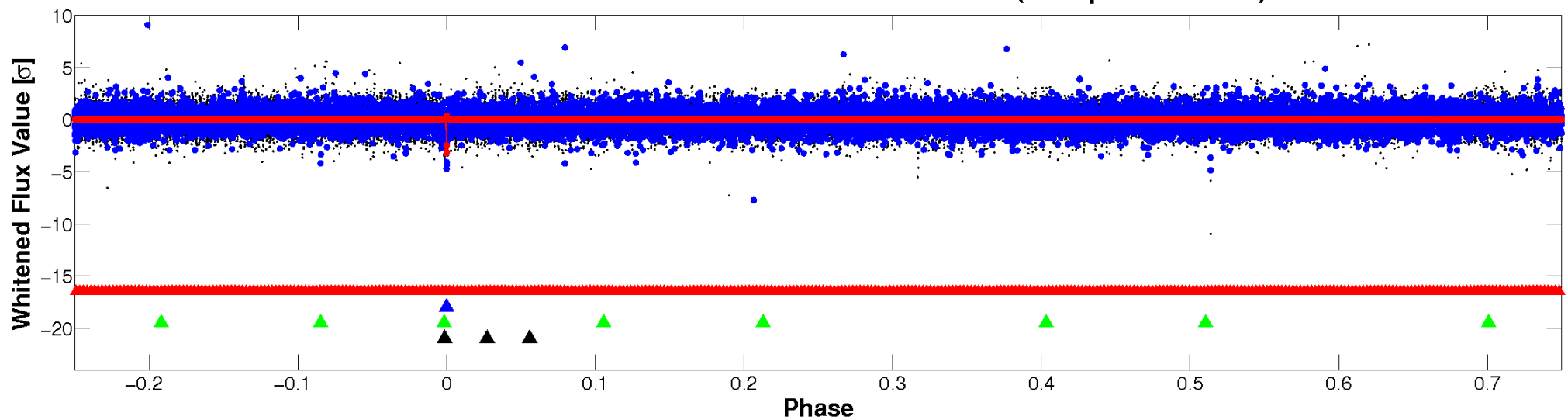


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

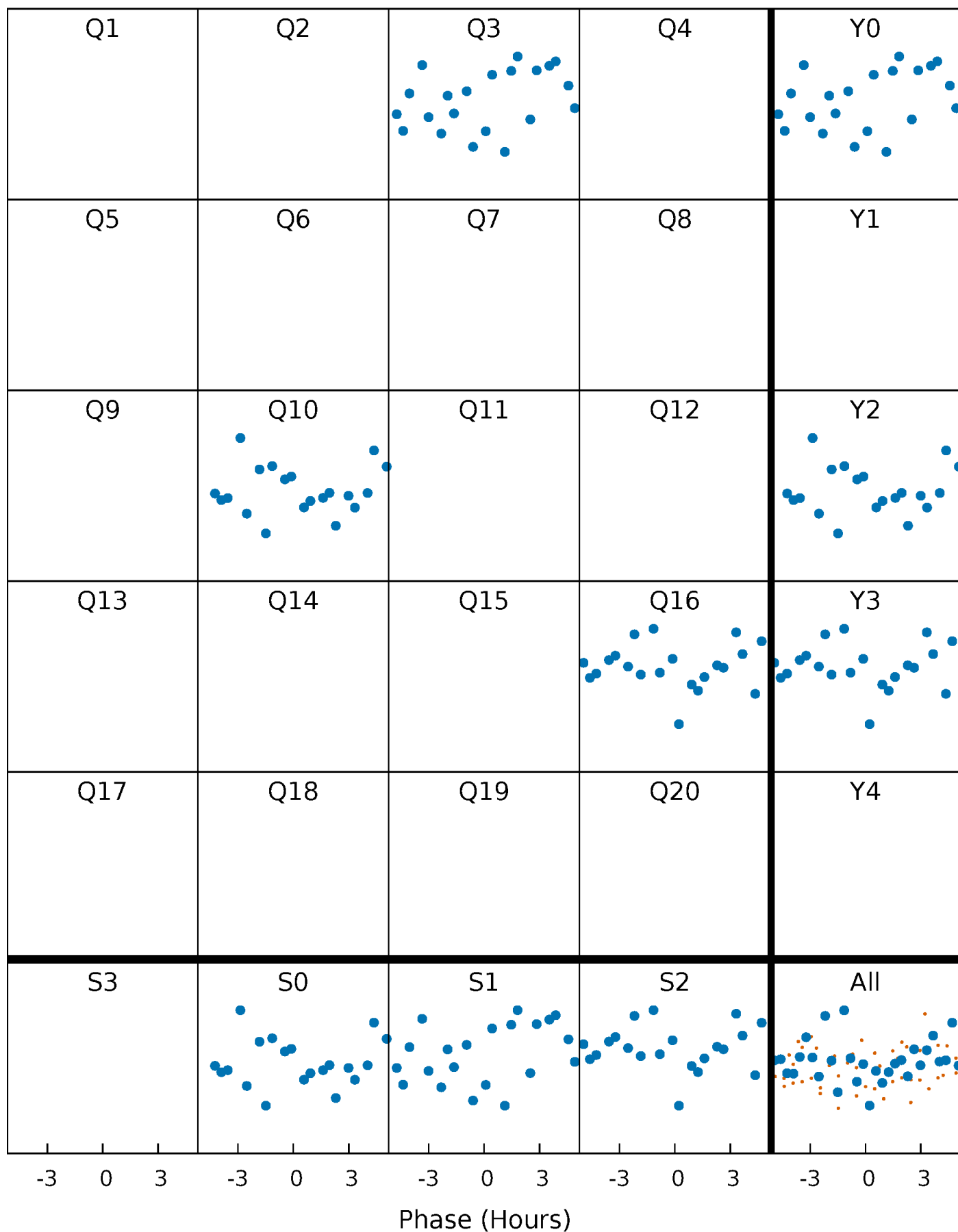


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



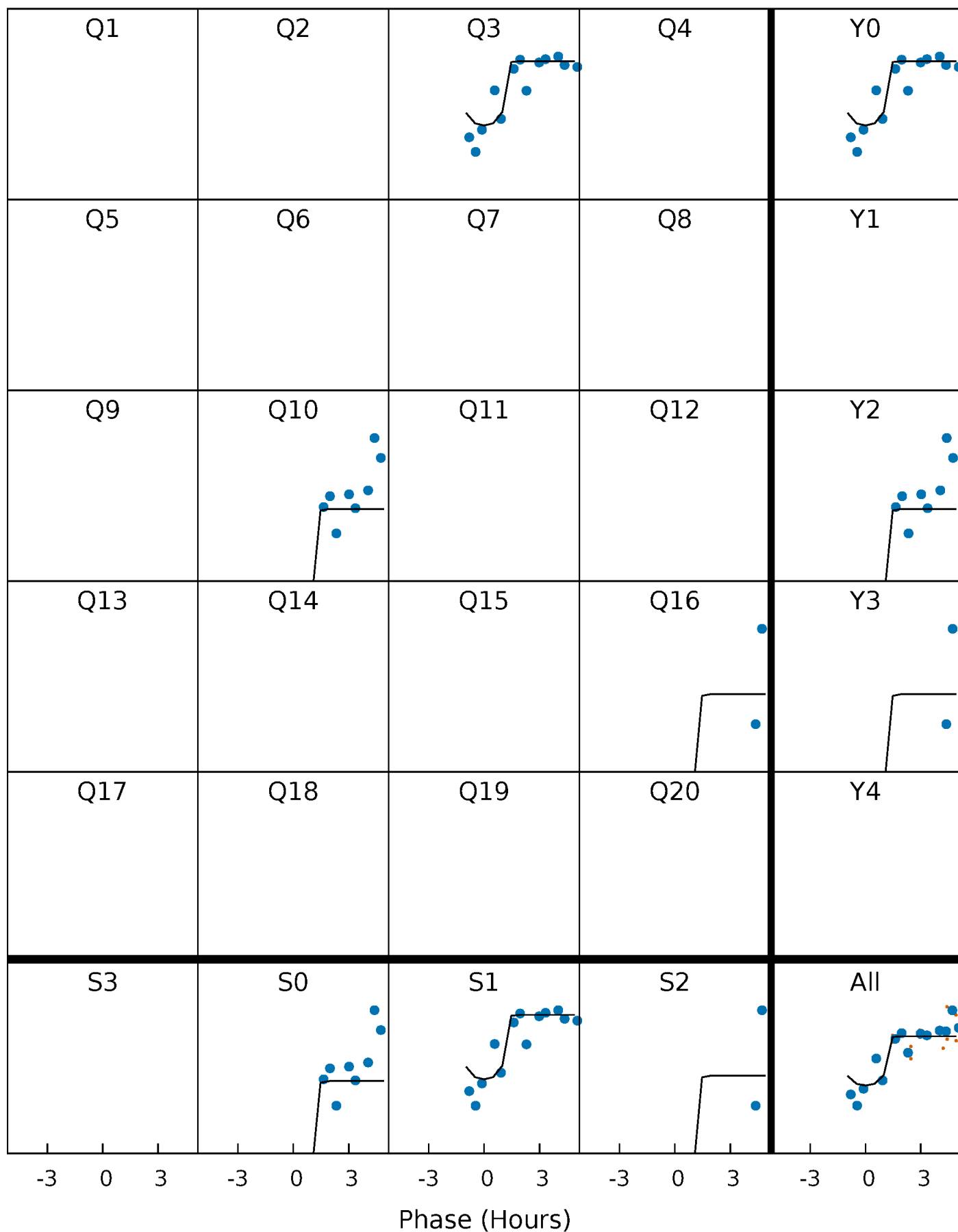
PDC Quarter-Phased Transit Curves

TCE 005529501-02 $P=610.743612$ Days $T_0=319.826752$ (BKJD)



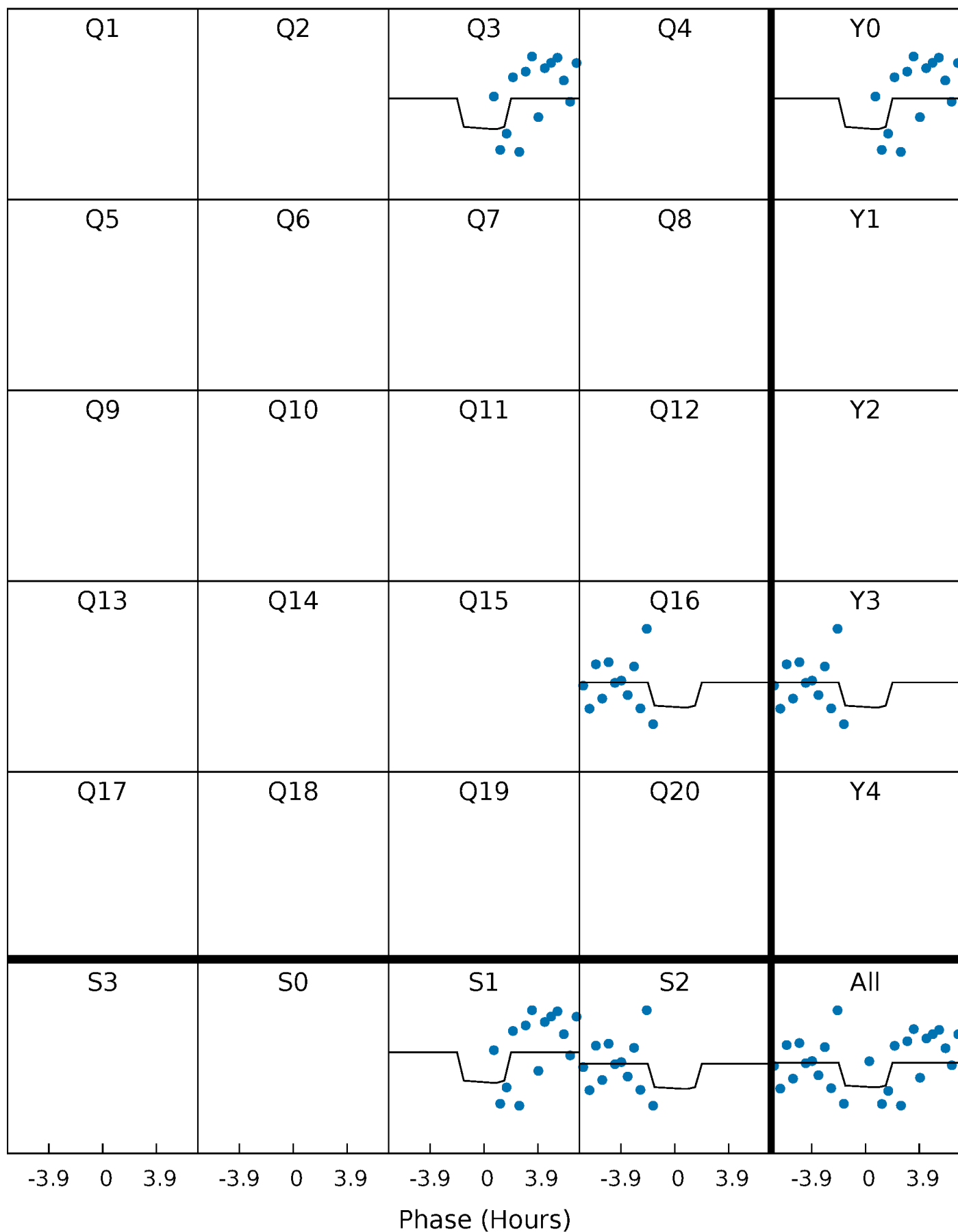
DV Quarter-Phased Transit Curves

TCE 005529501-02 $P=610.743612$ Days $T_0=319.826752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

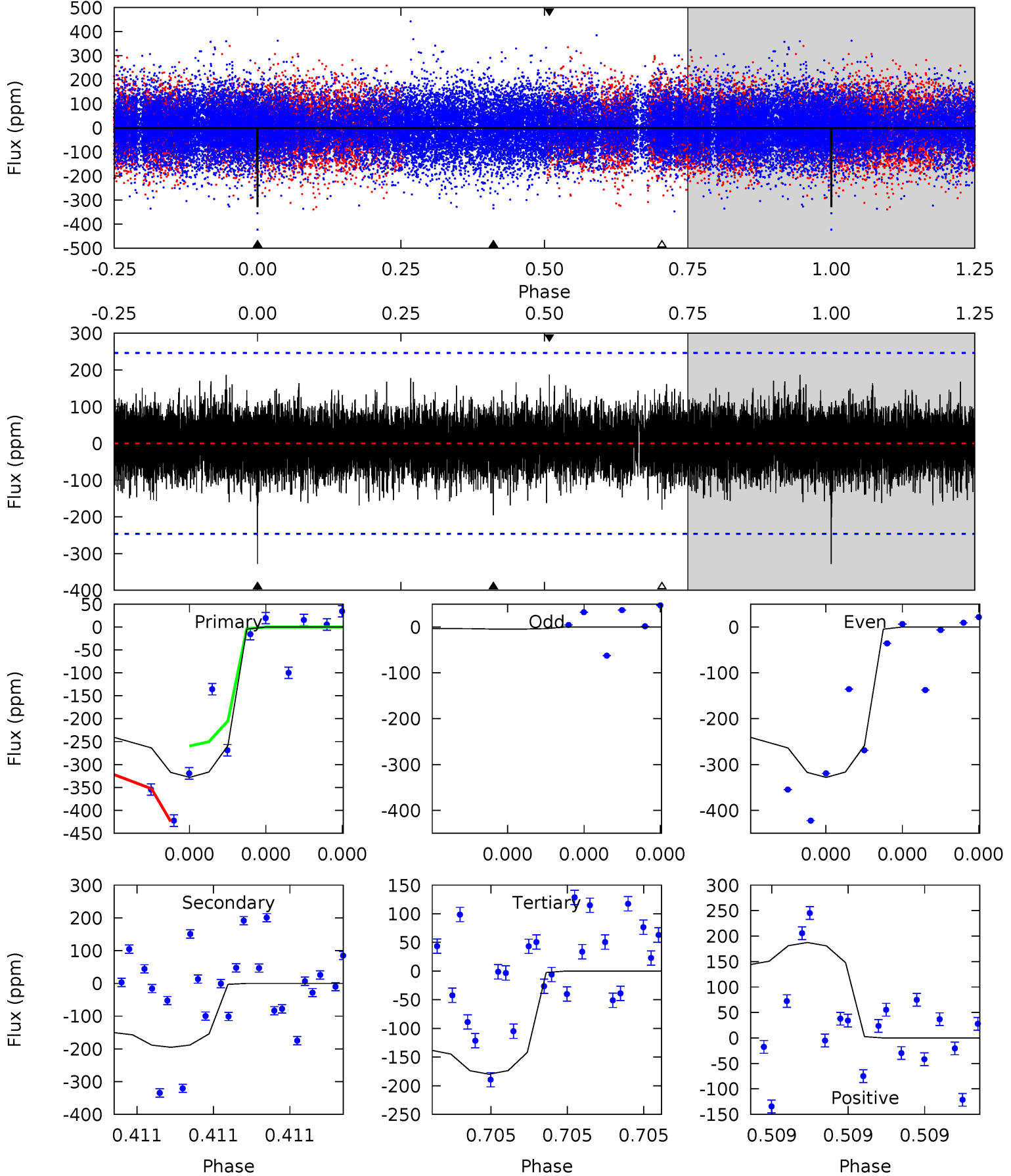
TCE 005529501-02 P=610.554773 Days $T_0=319.766095$ (BKJD)



DV Model-Shift Uniqueness Test

005529501-02, P = 610.743612 Days, E = 319.826752 Days

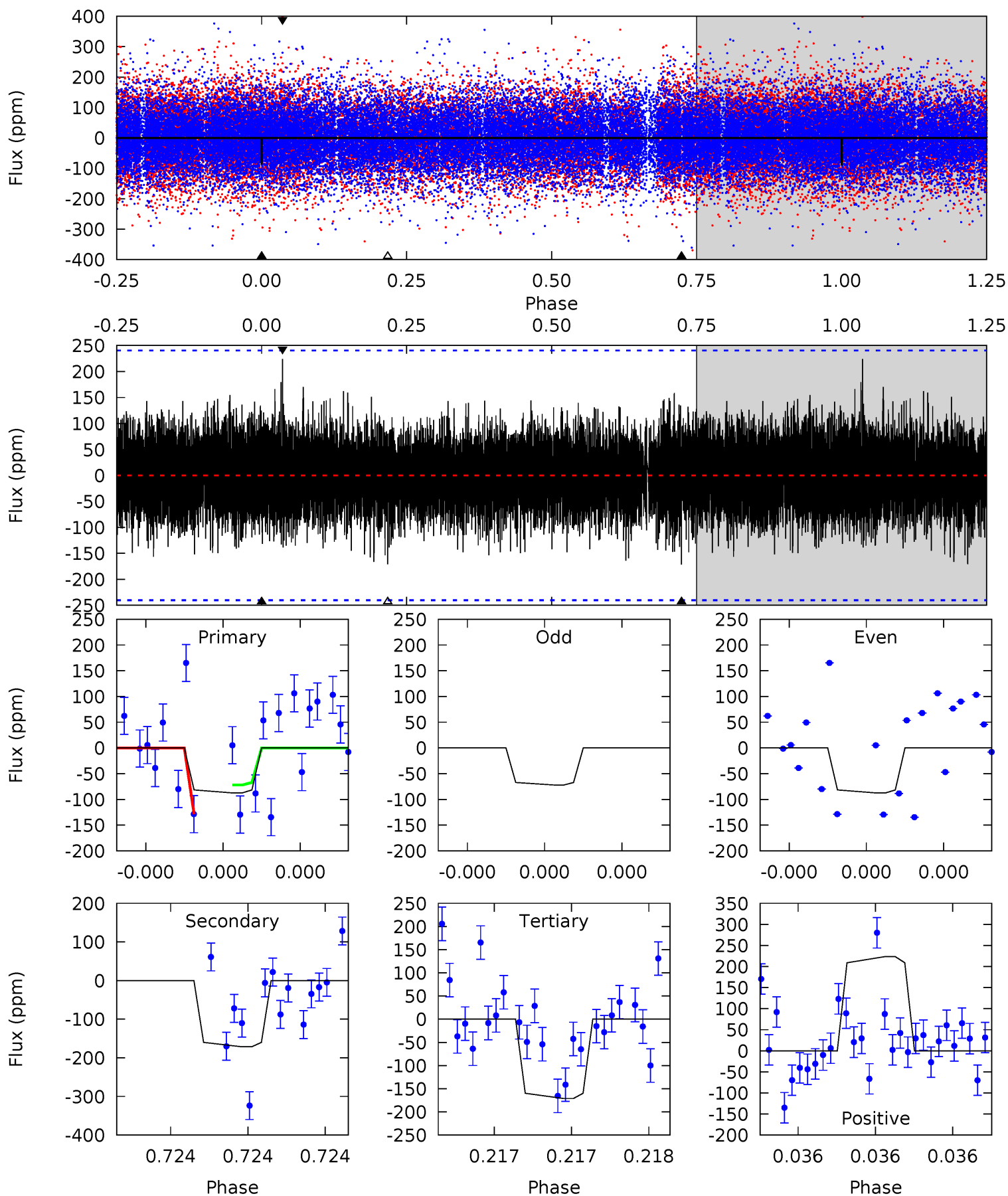
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	4.59	4.23	4.41	5.80	3.82	1.05	3.49	3.31	0.36	0.19	3.29	1.00	0.36	0.00



Alt Model-Shift Uniqueness Test

005529501-02, P = 610.554773 Days, E = 319.766095 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.06	4.05	4.05	5.29	5.68	3.65	1.04	-1.98	-3.23	0.01	-1.24	0.25	1.00	0.57	0.58



Stellar Parameters For KIC 005529501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6168^{+80}_{-86}	$4.250^{+0.125}_{-0.125}$	$0.020^{+0.150}_{-0.150}$	$1.307^{+0.230}_{-0.188}$	$1.105^{+0.113}_{-0.066}$	$0.697^{+0.391}_{-0.252}$
	+1%/-1%	+3%/-3%	+750%/-750%	+18%/-14%	+10%/-6%	+56%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005529501-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-195 ± 42	$7.36^{+7.07}_{-5.12}$	360^{+17}_{-15}	3664^{+2203}_{-684}	4426^{+39533}_{-3343}
Alt.	-171 ± 42	$6.49^{+6.91}_{-4.31}$	360^{+18}_{-18}	3711^{+2062}_{-770}	4832^{+37273}_{-3765}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

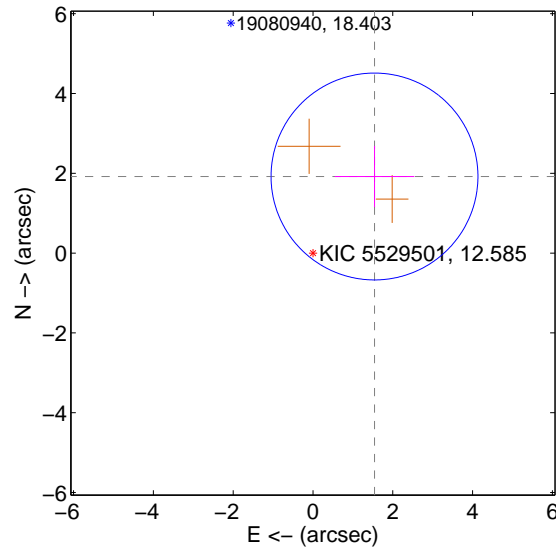
Supplemental centroid analysis for 005529501-02. Kepler magnitude: 12.59. Transit SNR 6.20

There are 0 quarters with good PRF difference image offsets

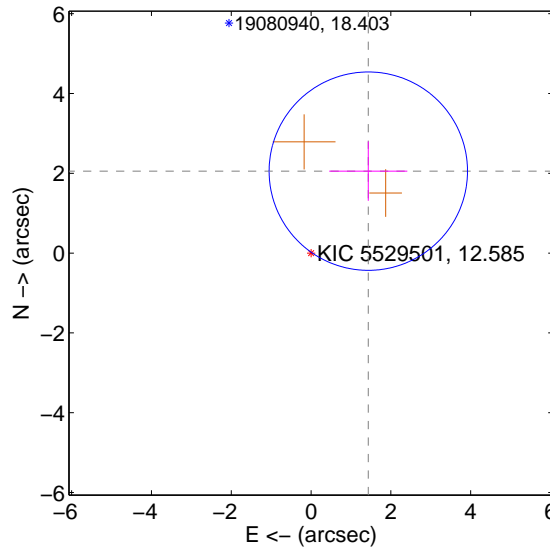
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.462 ± 0.864	2.85	-1.542 ± 0.996	1.919 ± 0.767
PRF-fit source offset from KIC position	2.505 ± 0.829	3.02	-1.435 ± 0.979	2.054 ± 0.744
photometric centroid source offset	0.86 ± 0.93	0.93	0.69 ± 0.91	-0.51 ± 0.96

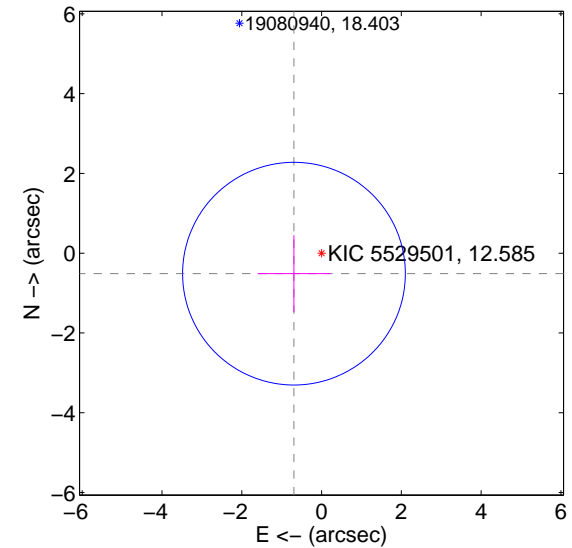
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

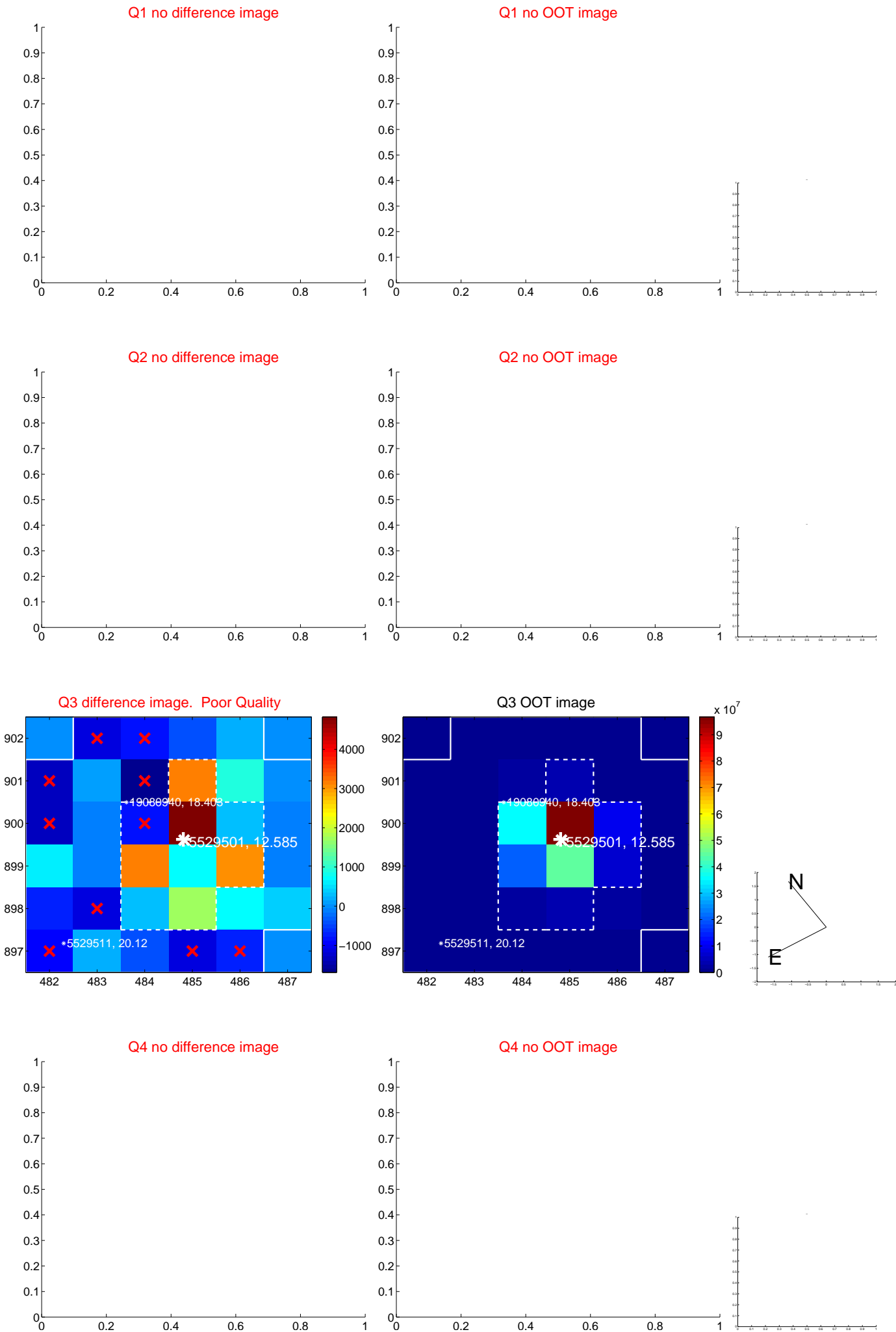


offset from photometric centroids



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

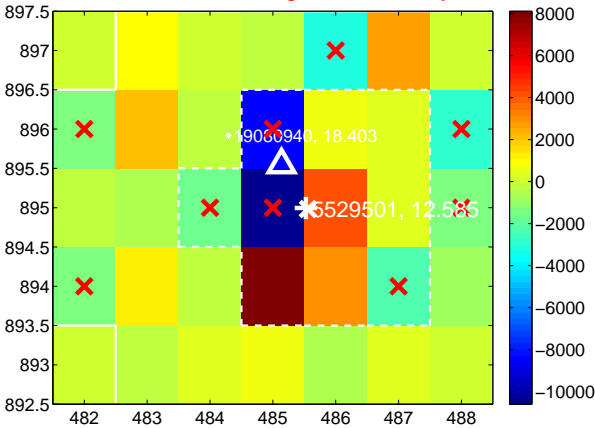
Q9 no difference image



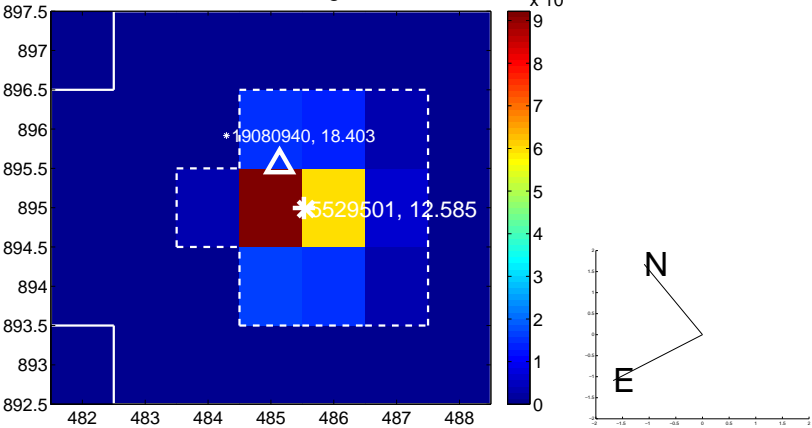
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



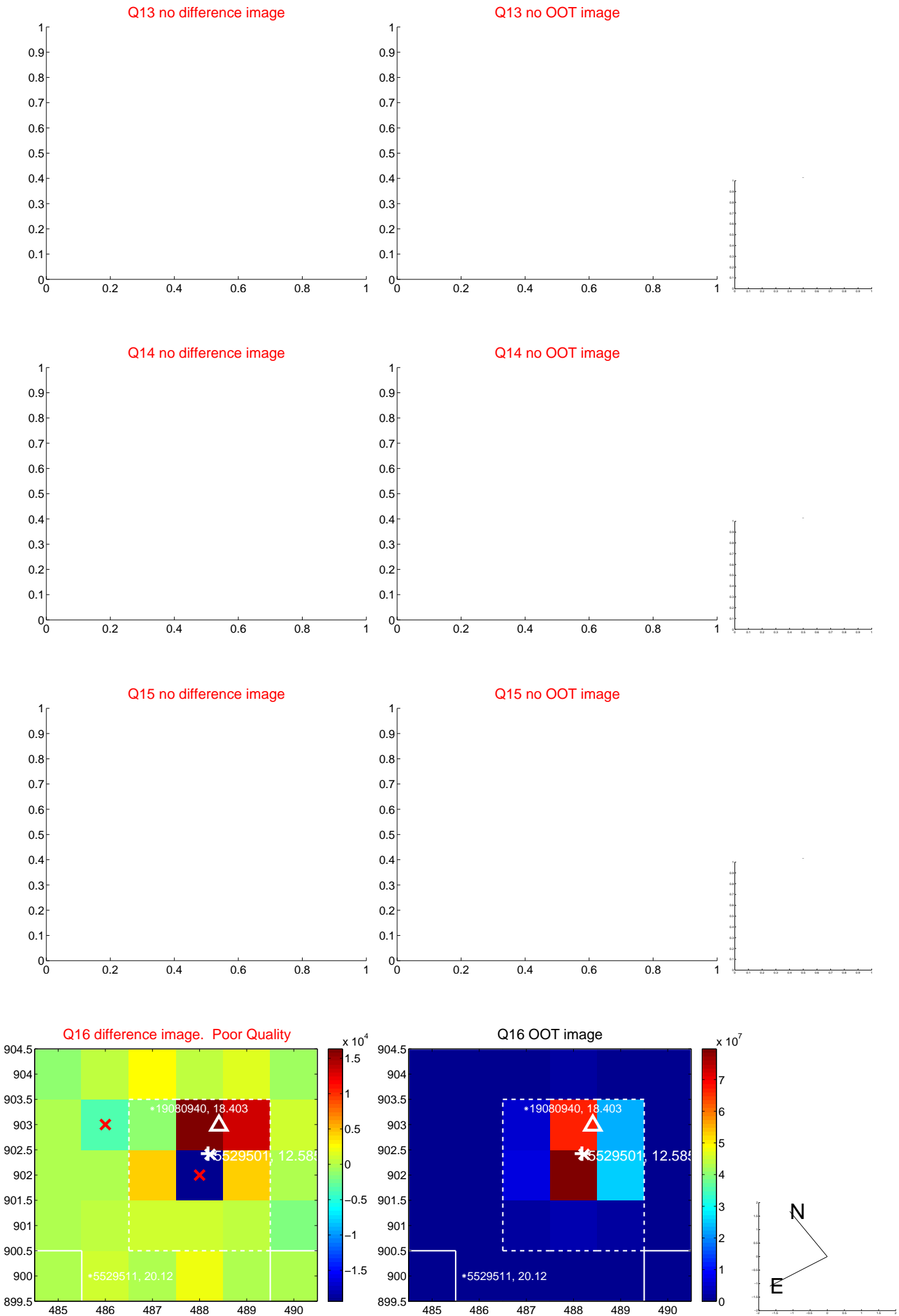
Q12 no difference image



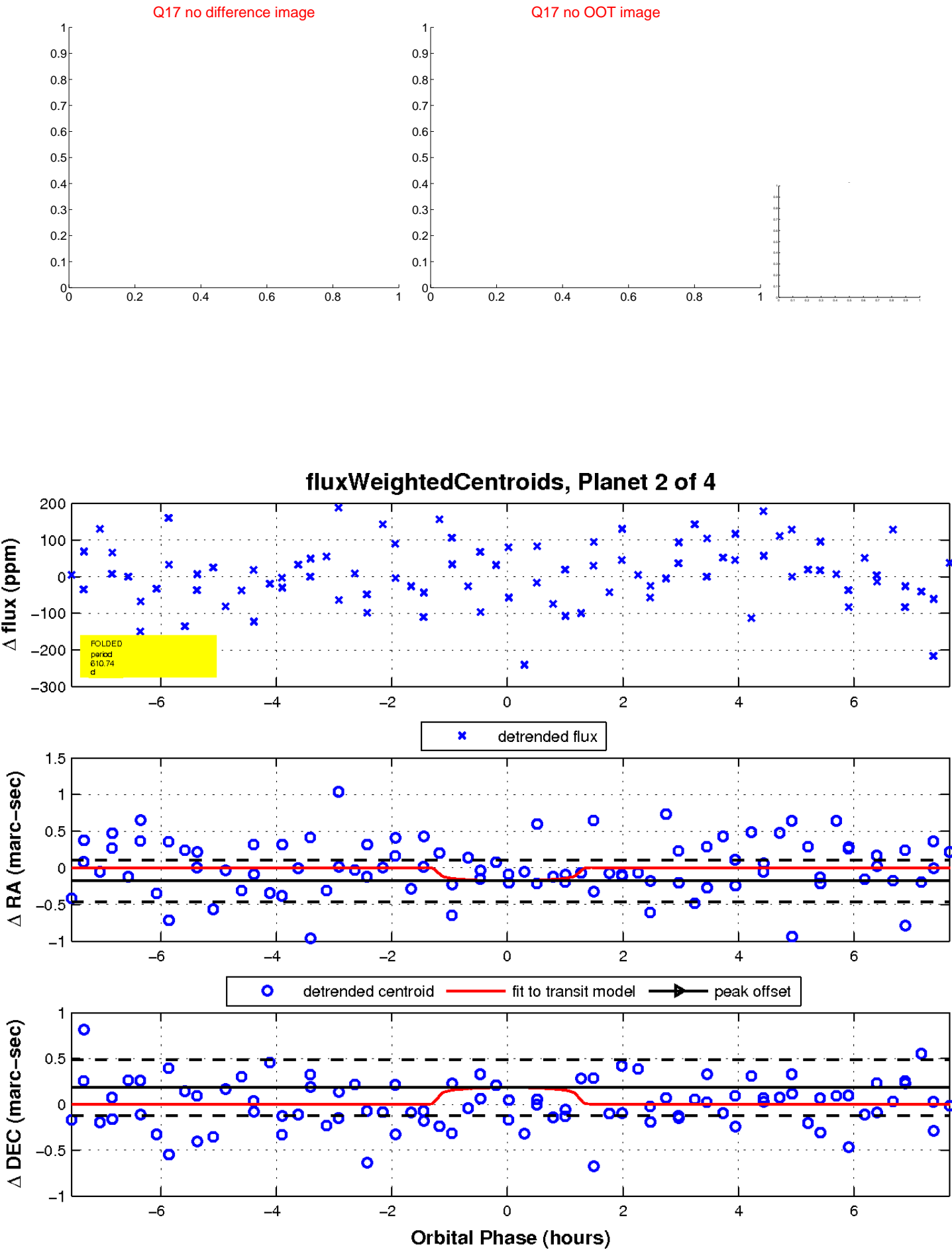
Q12 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

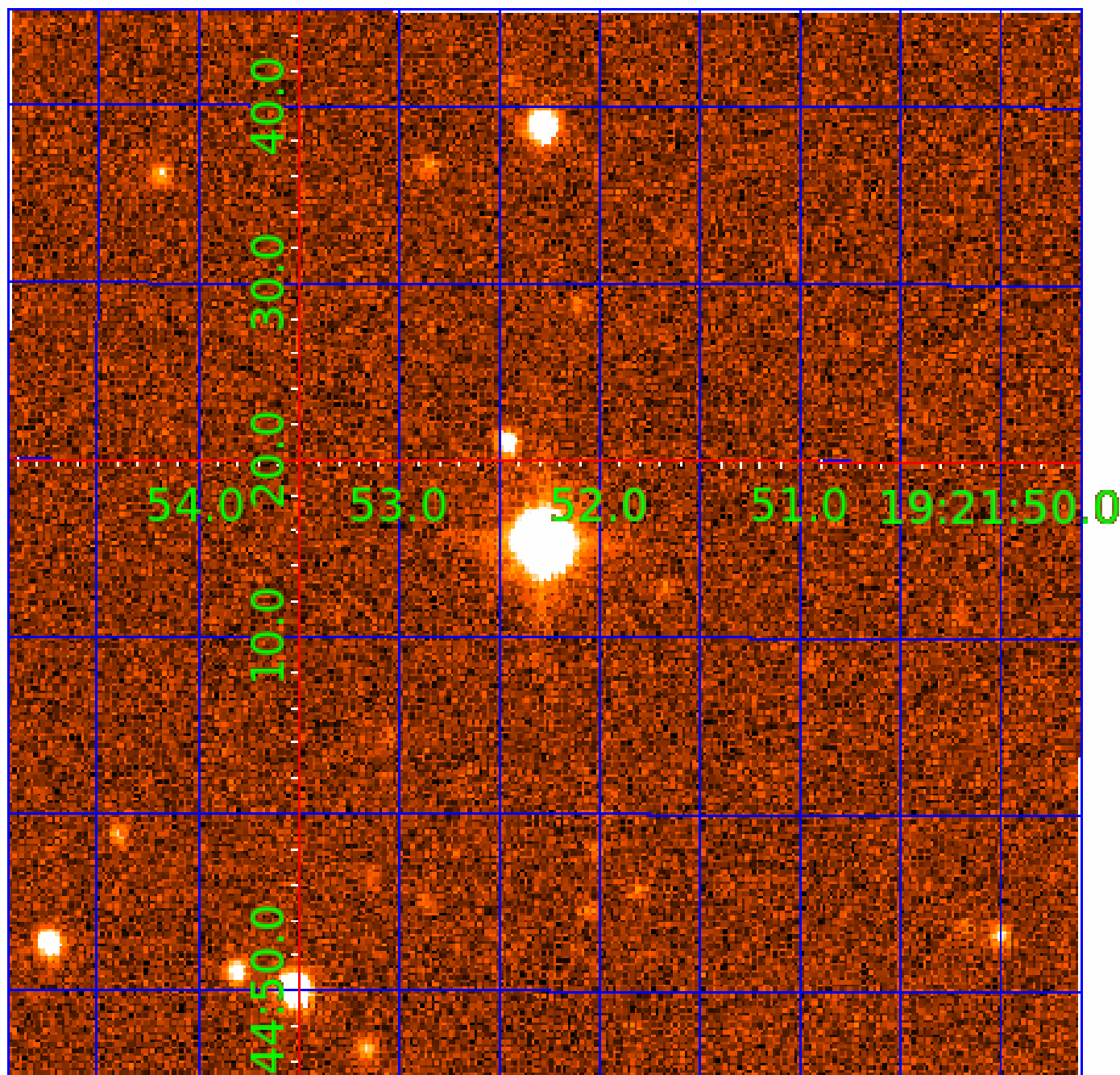


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005529501

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
005529501-01	OBS	6592.01	1.519521	132.555614	10.4	4.982	8.3	7.9	1.31	6168	0.49	3090.63
005529501-02	OBS	No	610.743612	319.826752	300.0	2.583	14.6	6.2	1.31	6168	2.49	1.04
005529501-03	OBS	No	181.746516	268.110386	85.3	29.841	9.7	5.6	1.31	6168	1.36	5.24
005529501-04	OBS	No	628.201616	319.026794	164.1	5.896	11.2	6.7	1.31	6168	1.91	1.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005529501-01	OBS	FP	0.00	1	0	0	1	MOD_NONUNIQ_ALT—EPHEM_MATCH
005529501-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

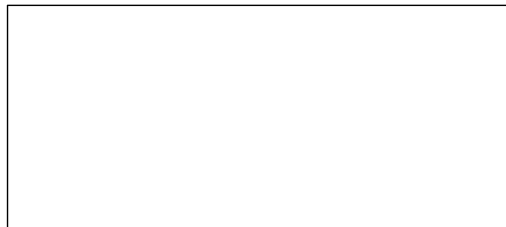
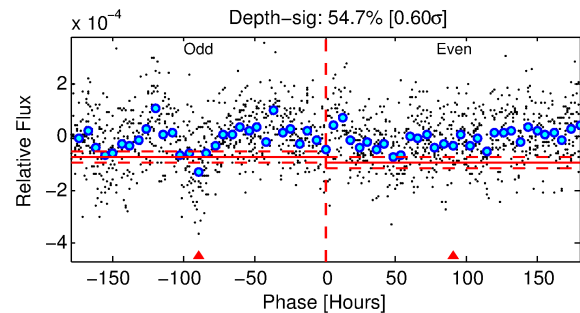
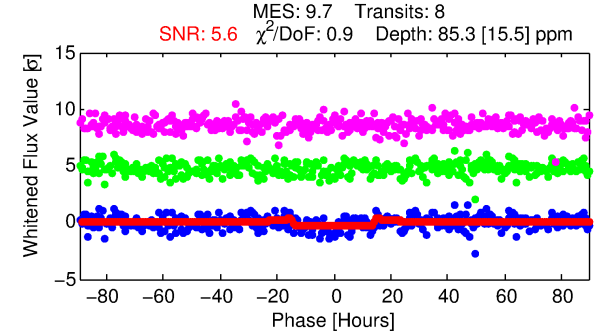
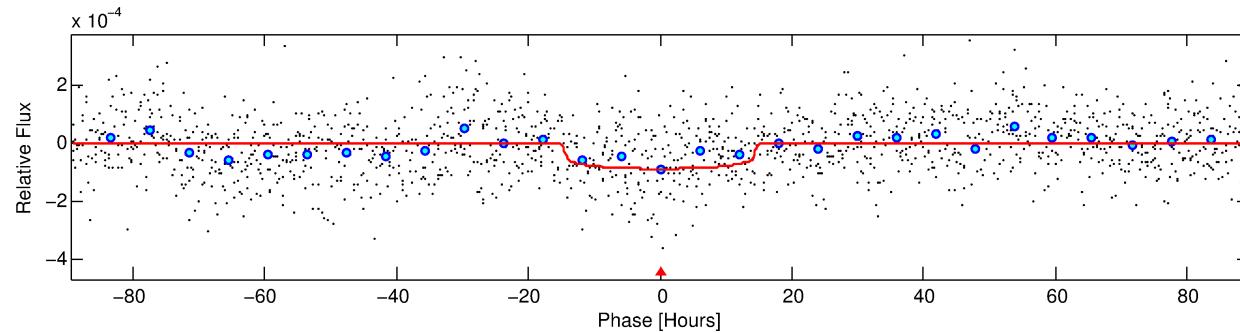
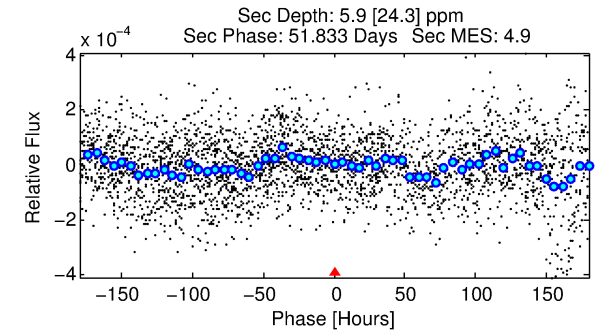
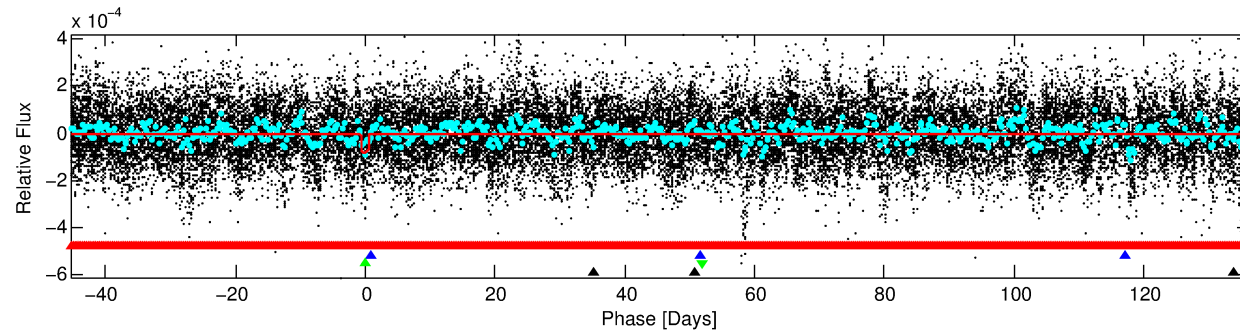
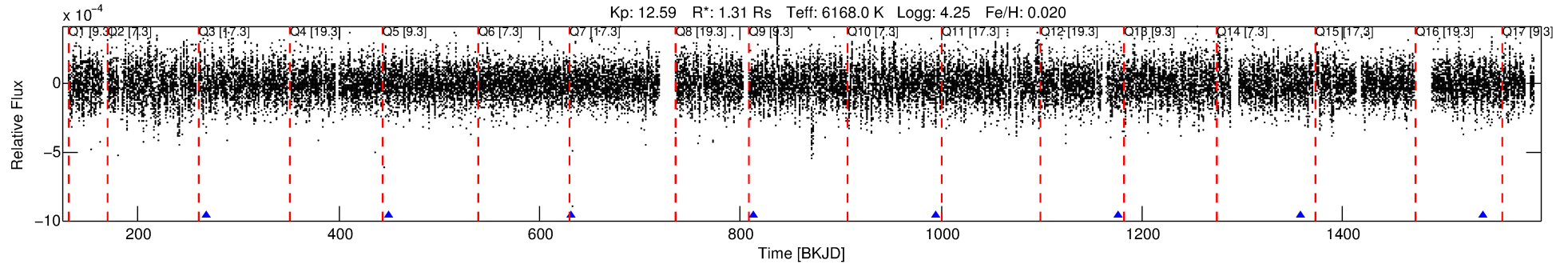
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005529501-03

No Significant Match Found

DV One-Page Summary

KIC: 5529501 Candidate: 3 of 4 Period: 181.747 d
KOI: K06592 Corr: No Ephemeris Match



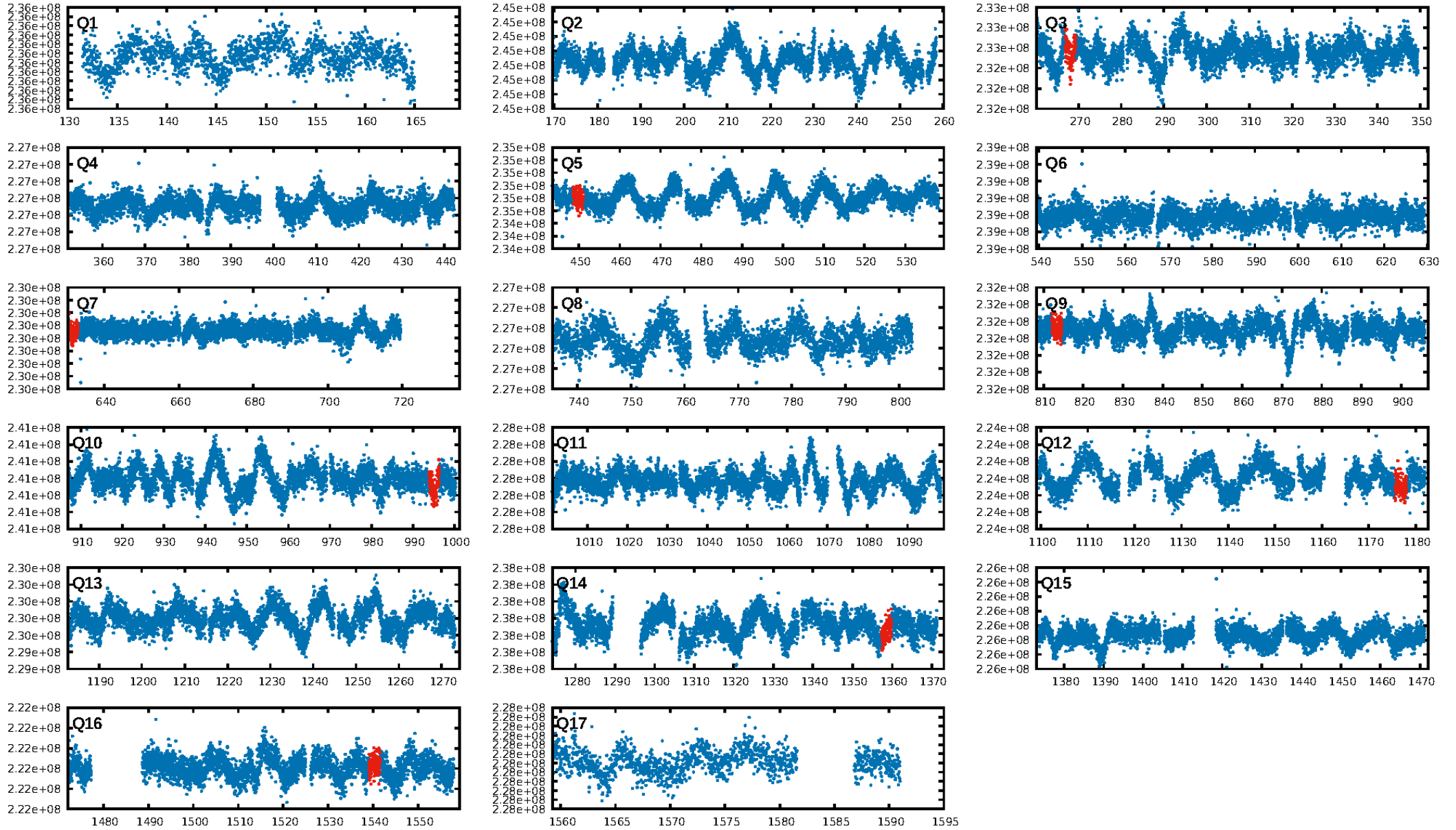
DV Fit Results:

Period = 181.74652 [0.00831] d
Epoch = 268.1104 [0.0306] BKJD
Rp/R* = 0.0096 [0.0016]
a/R* = 25.99 [16.83]
b = 0.84 [0.23]
Seff = 5.24 [1.22]
Teq = 386 [22] K
Rp = 1.36 [0.33] Re
a = 0.6499 [0.0985] AU
Ag = 744.16 [3053.92] [0.24 σ]
Teffp = 3116 [3192] K [0.86 σ]

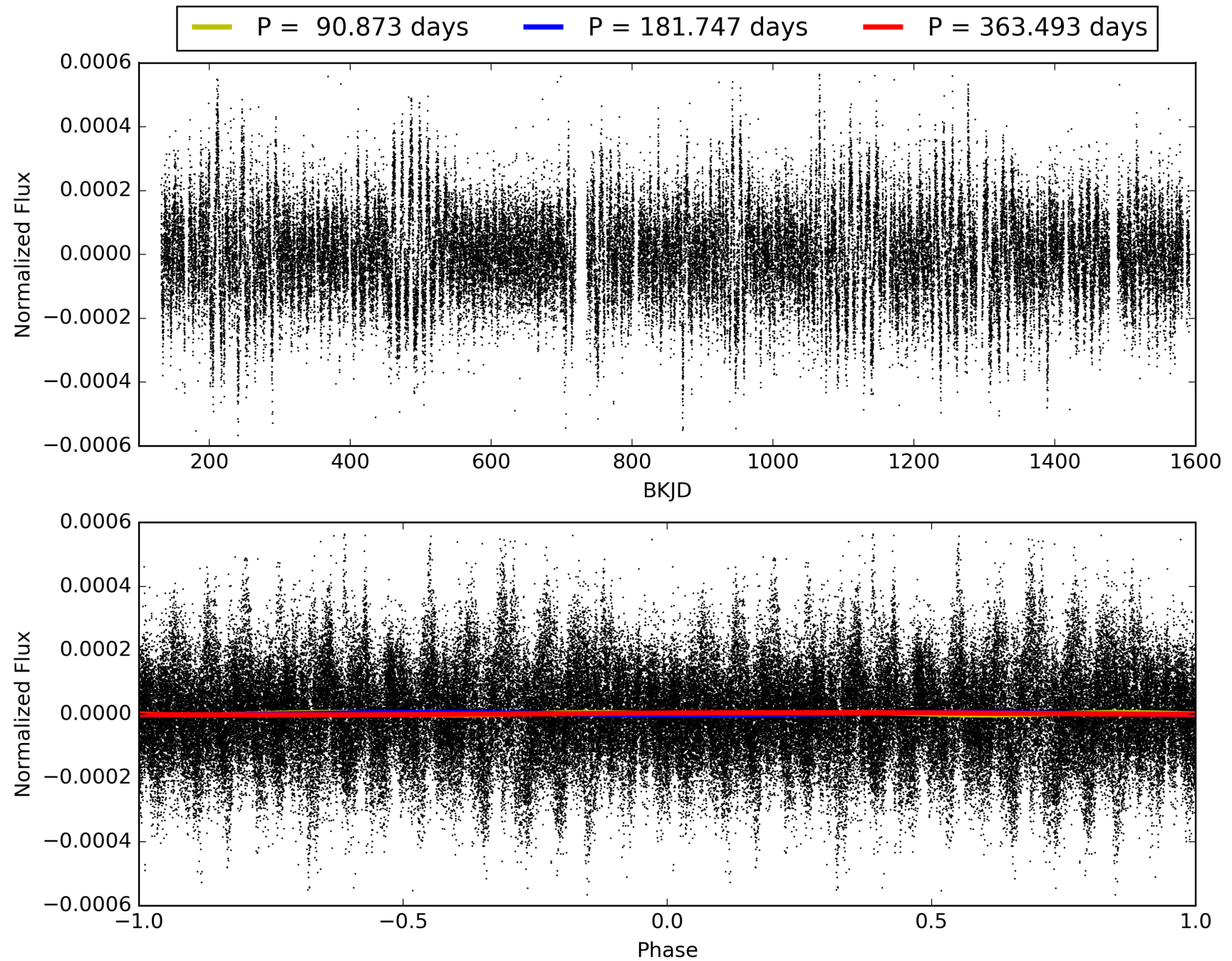
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [142.97 σ]
LongPeriod-sig: 100.0% [343.74 σ]
ModelChiSquare2-sig: 29.7%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.66e-19
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.4351
Centroid-sig: 47.6%
Centroid-so: 0.752 arcsec [0.92 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/5]

TCE 005529501-03, PDC Light Curves

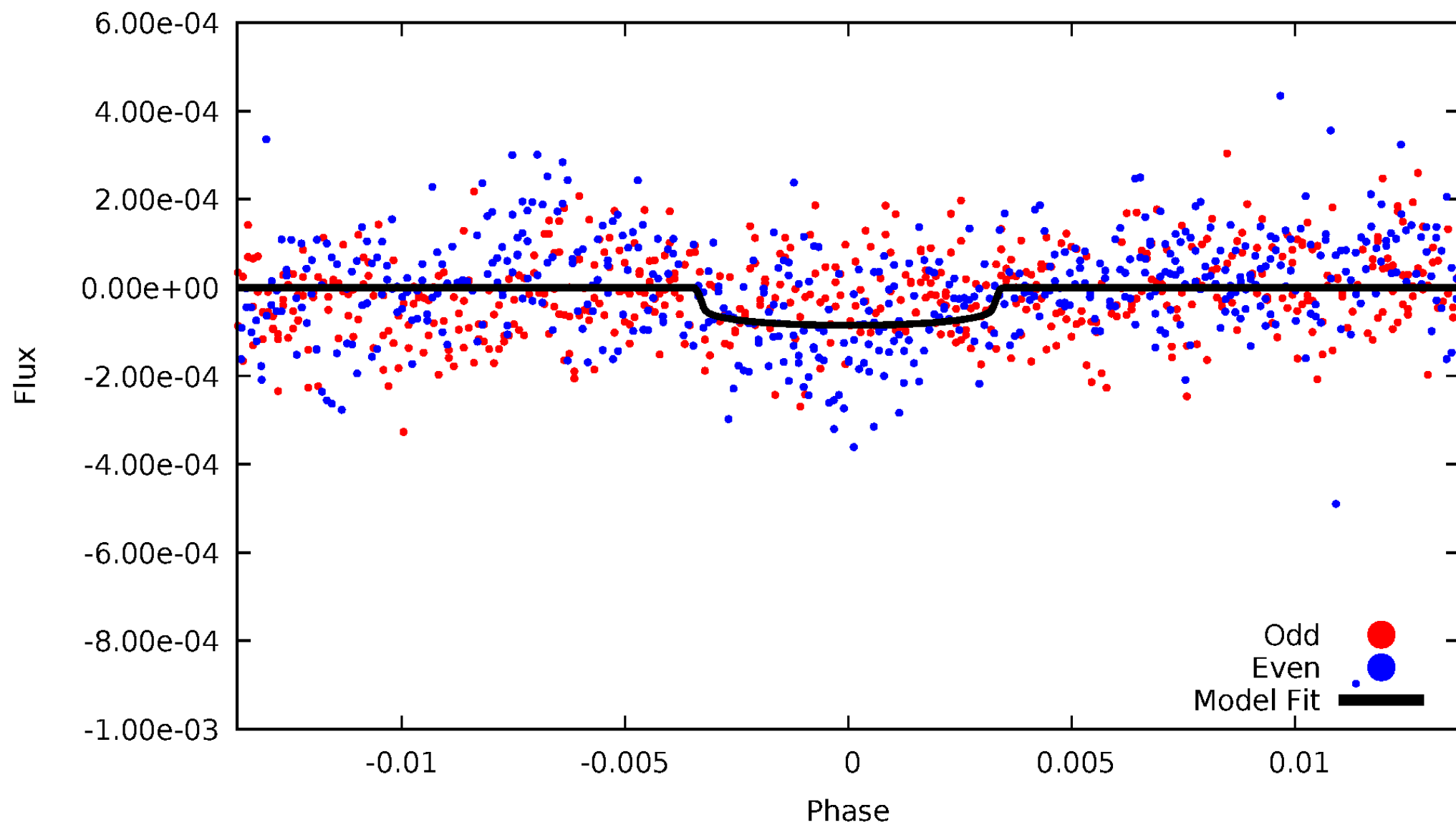


TCE 005529501-03



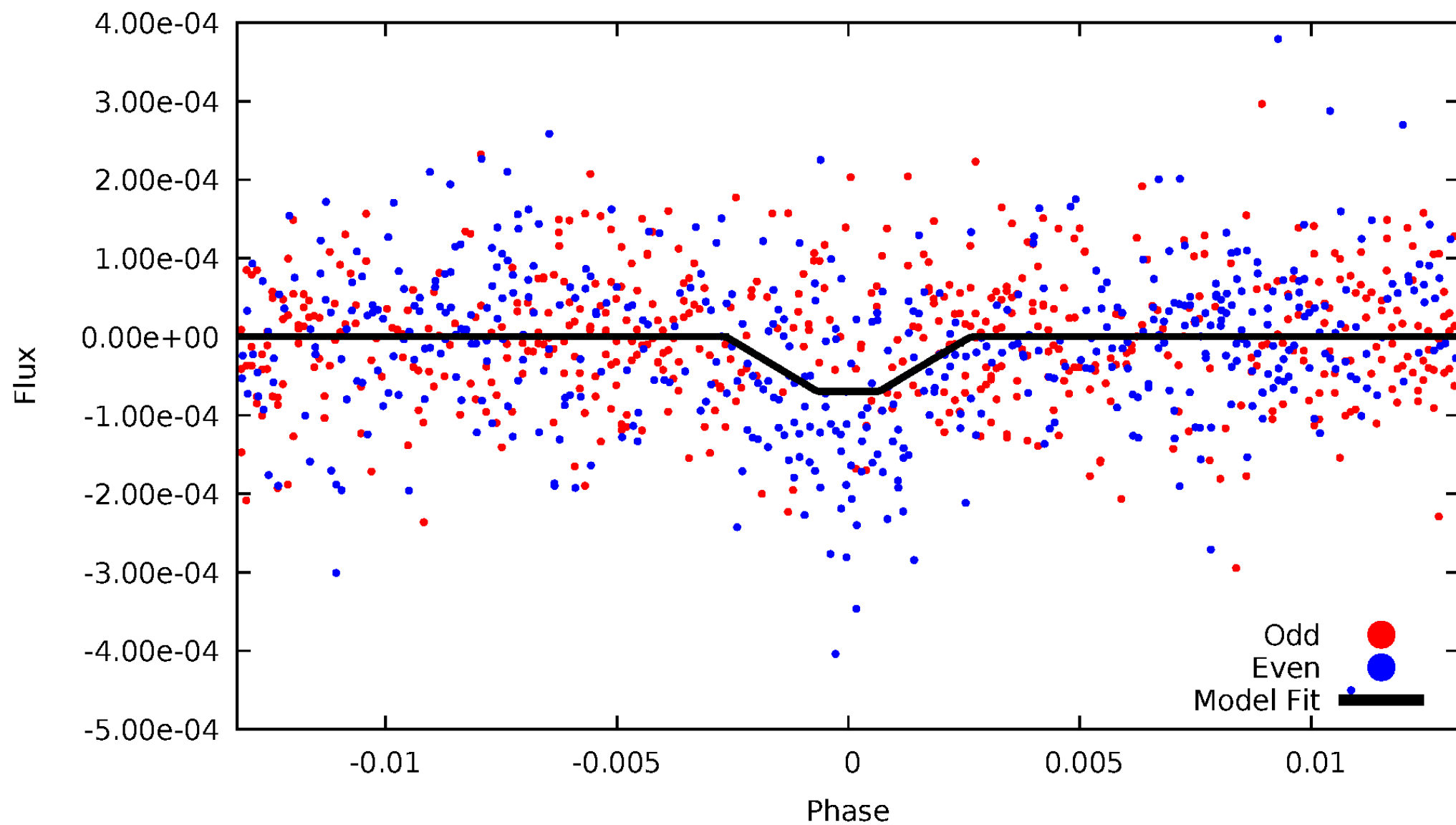
DV Odd/Even

TCE 005529501-03



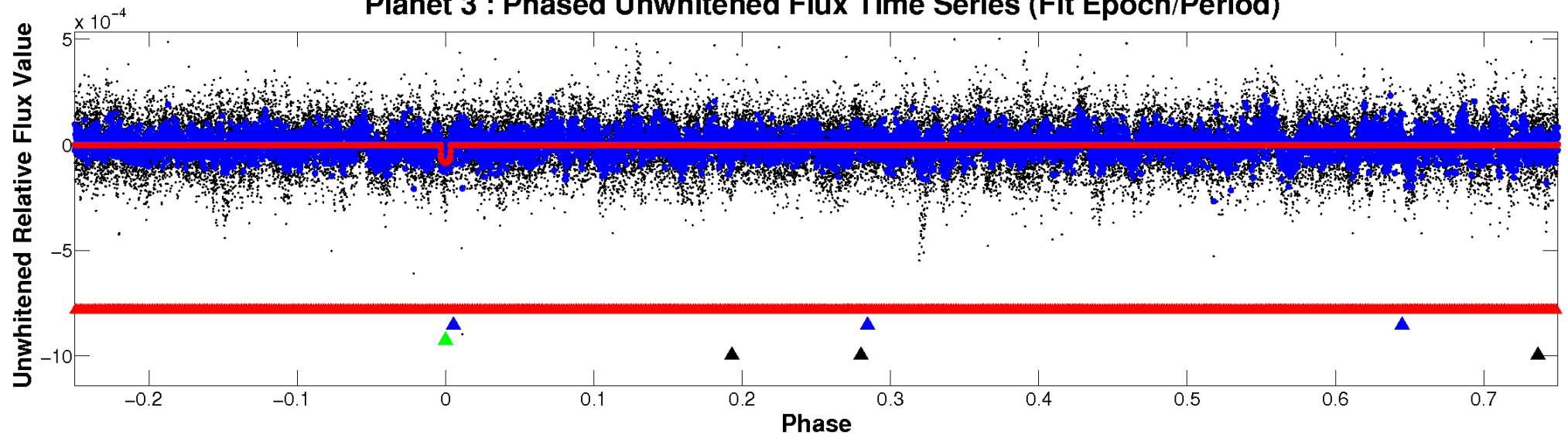
ALT Odd/Even

TCE 005529501-03

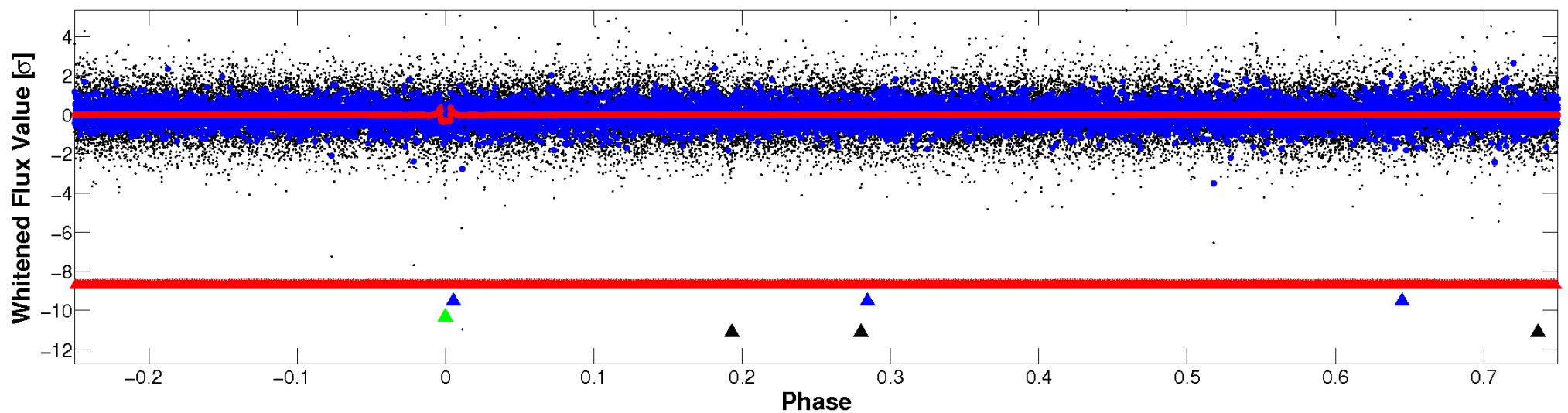


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



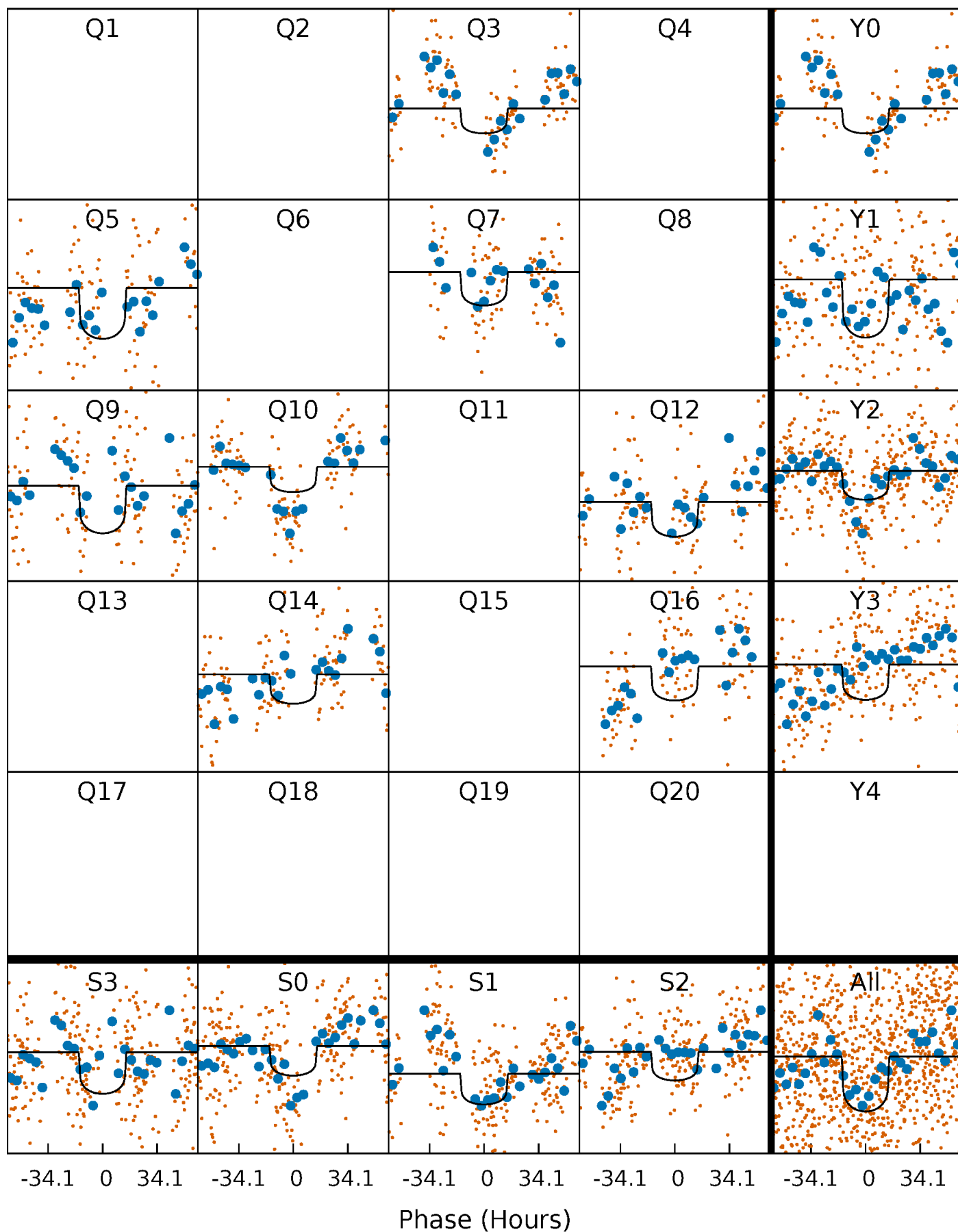
PDC Quarter-Phased Transit Curves

TCE 005529501-03 $P=181.746515$ Days $T_0=268.110386$ (BKJD)



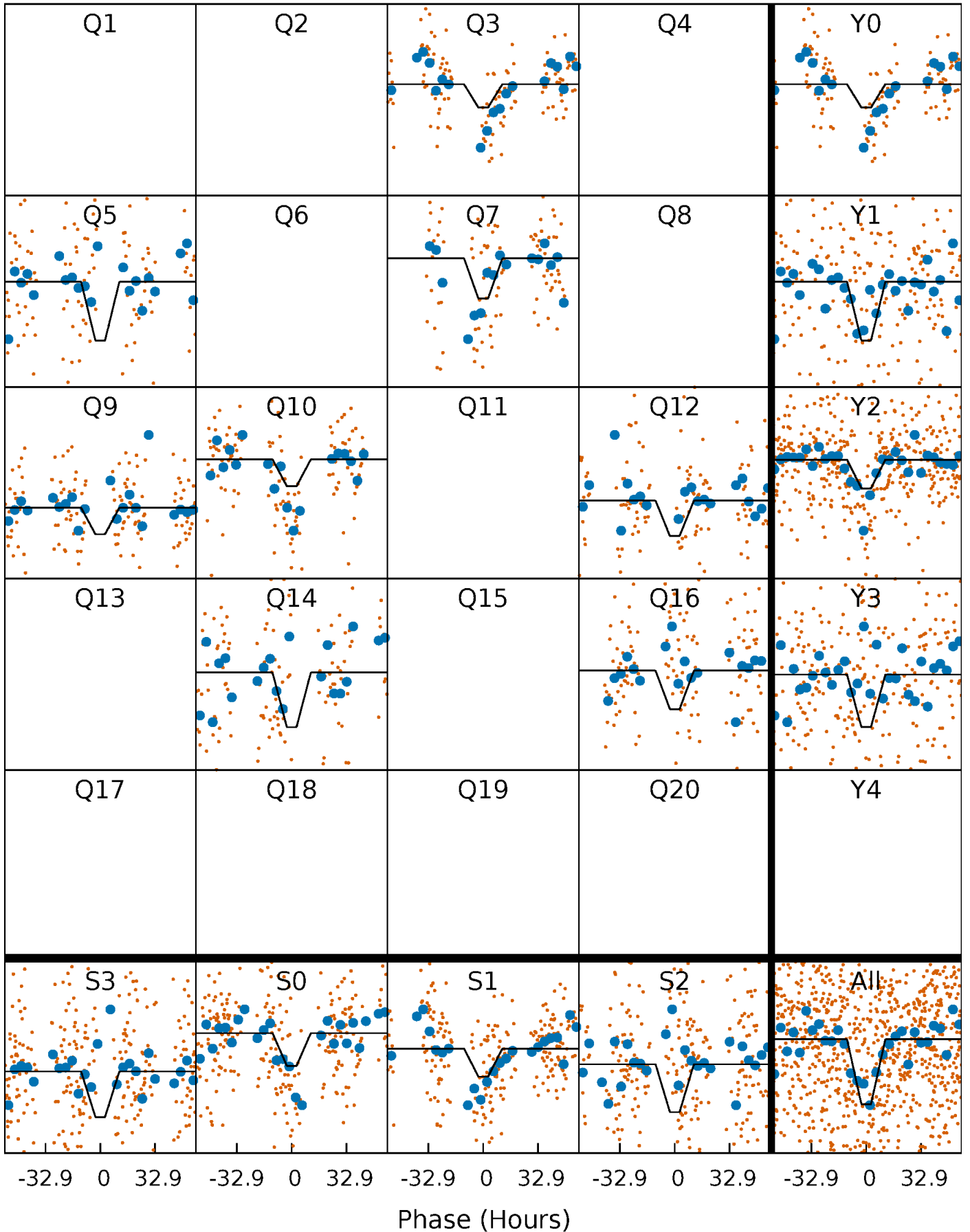
DV Quarter-Phased Transit Curves

TCE 005529501-03 P=181.746515 Days $T_0=268.110386$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

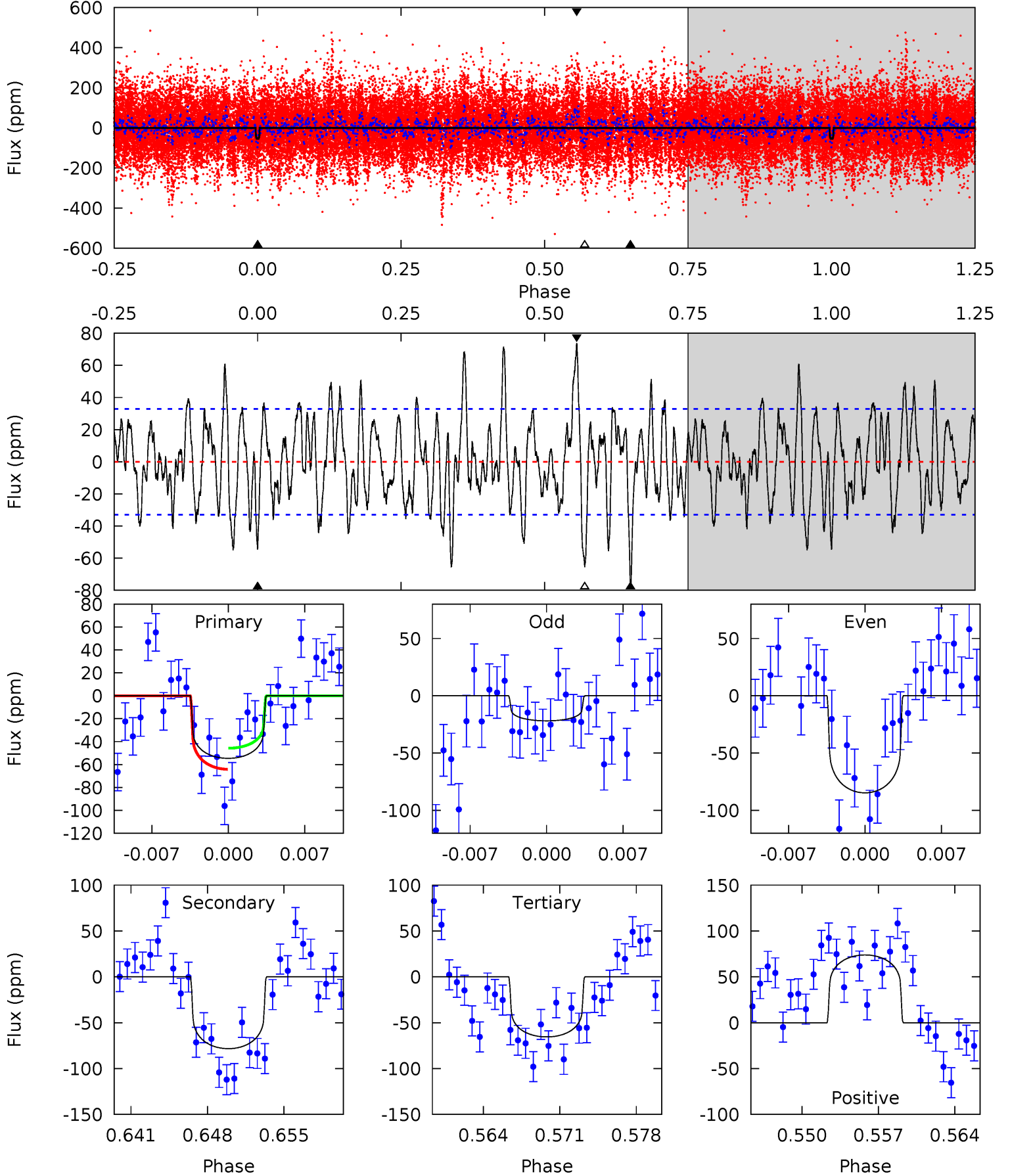
TCE 005529501-03 P=181.715649 Days $T_0=268.182822$ (BKJD)



DV Model-Shift Uniqueness Test

005529501-03, P = 181.746515 Days, E = 86.363871 Days

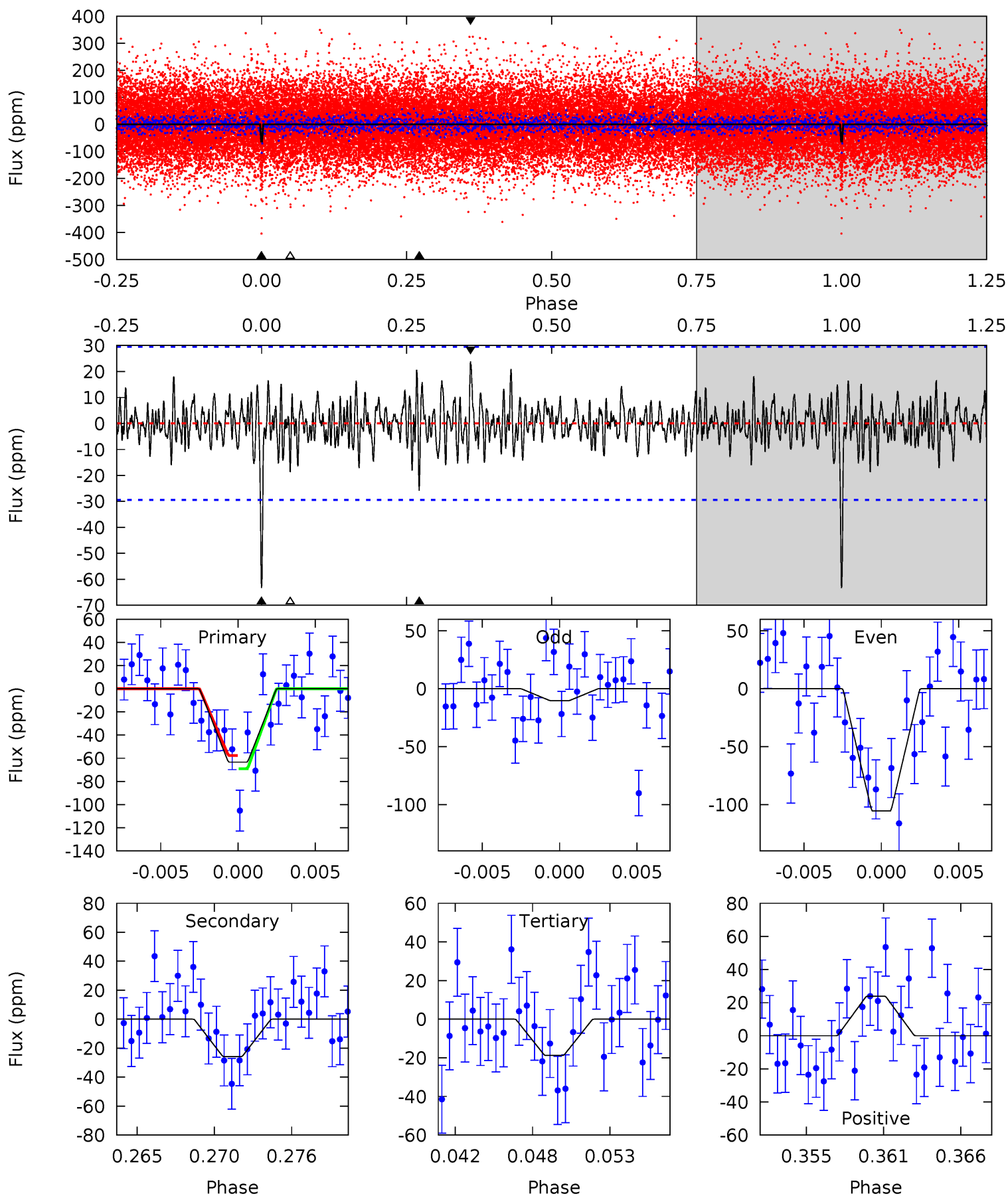
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.45	12.1	10.1	11.4	5.10	2.70	3.65	-1.69	-2.97	1.98	0.70	4.87	1.32	0.49	1.42



Alt Model-Shift Uniqueness Test

005529501-03, P = 181.715649 Days, E = 86.467173 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	4.51	3.27	4.17	5.15	2.79	1.09	7.80	6.90	1.24	0.34	8.23	3.44	0.27	1.00



Stellar Parameters For KIC 005529501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6168^{+80}_{-86}	$4.250^{+0.125}_{-0.125}$	$0.020^{+0.150}_{-0.150}$	$1.307^{+0.230}_{-0.188}$	$1.105^{+0.113}_{-0.066}$	$0.697^{+0.391}_{-0.252}$
	+1%/-1%	+3%/-3%	+750%/-750%	+18%/-14%	+10%/-6%	+56%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005529501-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-78 ± 6	$1.37^{+0.26}_{-0.25}$	538^{+26}_{-24}	5923^{+551}_{-416}	9838^{+4726}_{-3051}
Alt.	-26 ± 6	$1.18^{+0.28}_{-0.25}$	539^{+27}_{-24}	4934^{+508}_{-429}	4366^{+2696}_{-1665}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

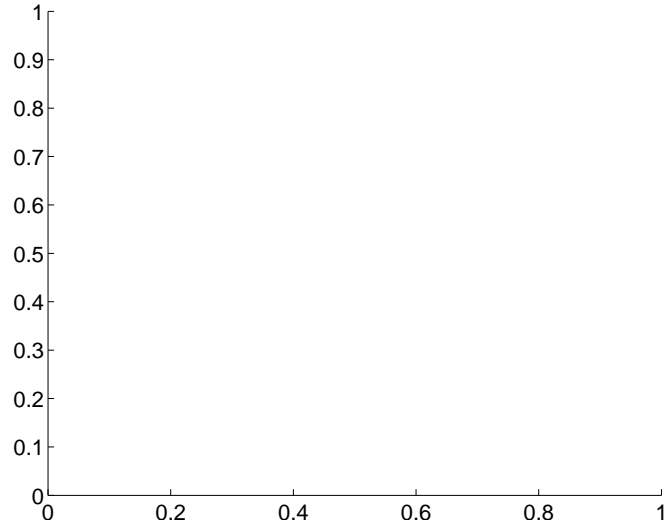
Supplemental centroid analysis for 005529501-03. Kepler magnitude: 12.59. Transit SNR 5.61

There are 0 quarters with good PRF difference image offsets

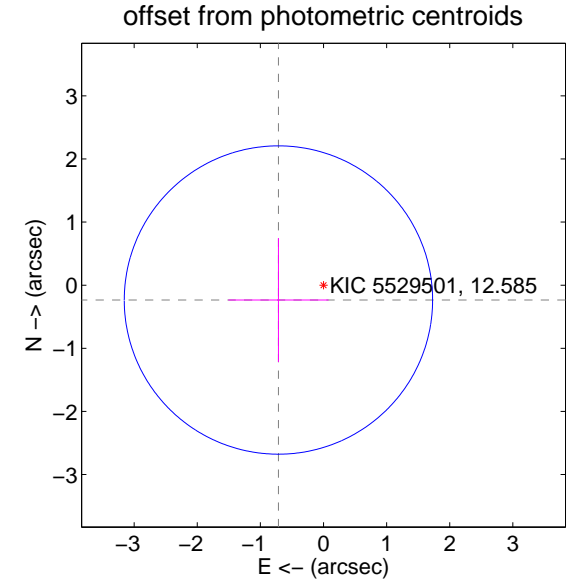
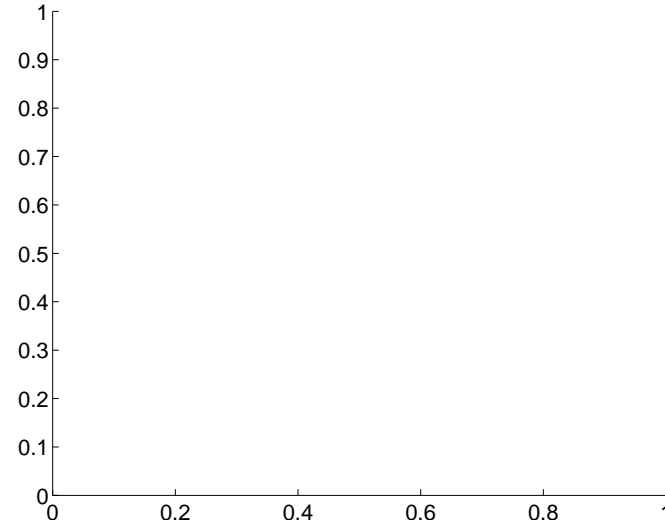
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.75 ± 0.81	0.92	0.71 ± 0.79	-0.24 ± 0.98

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

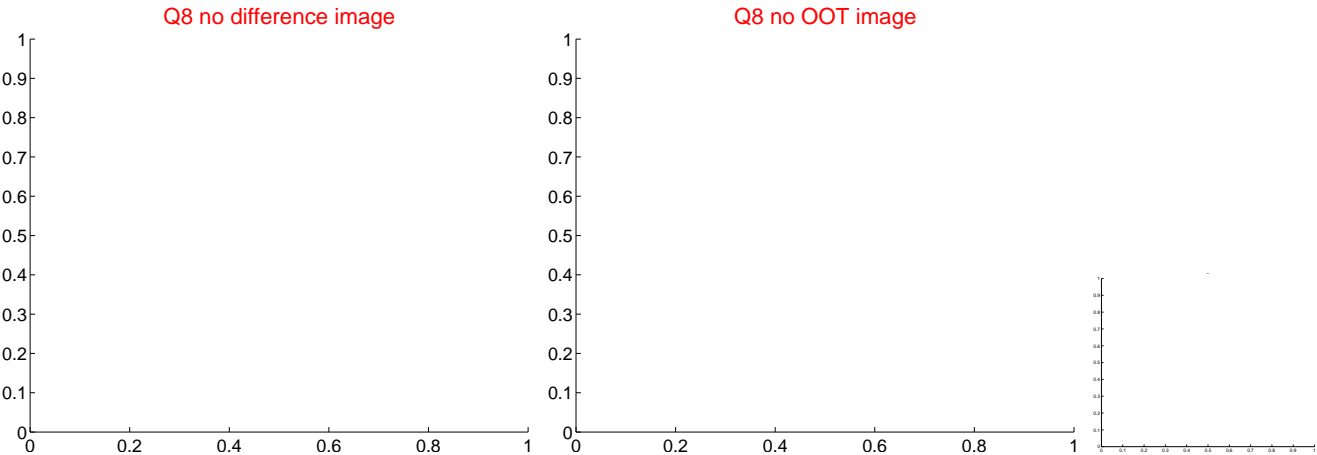
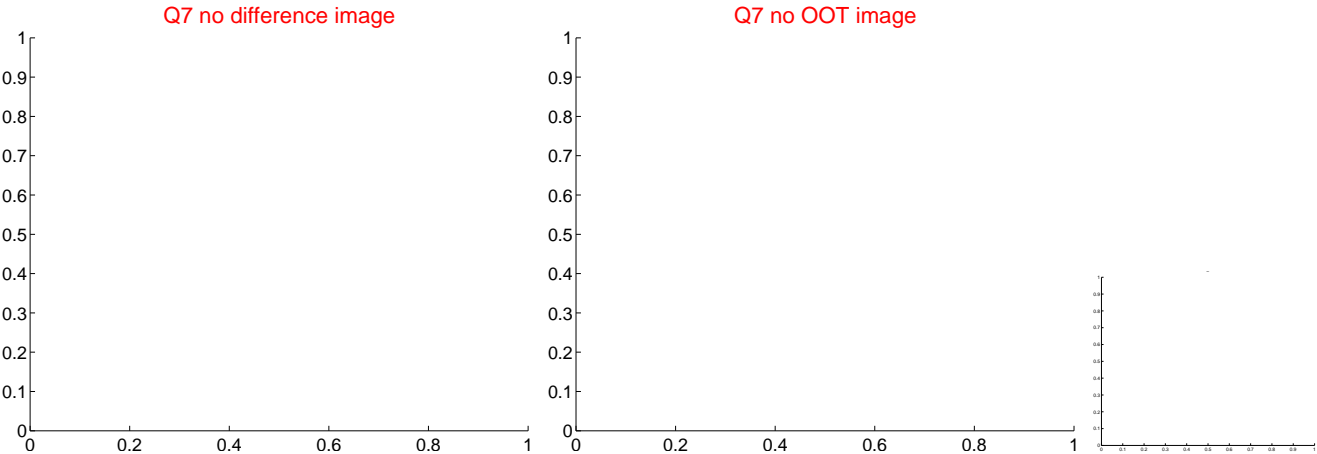
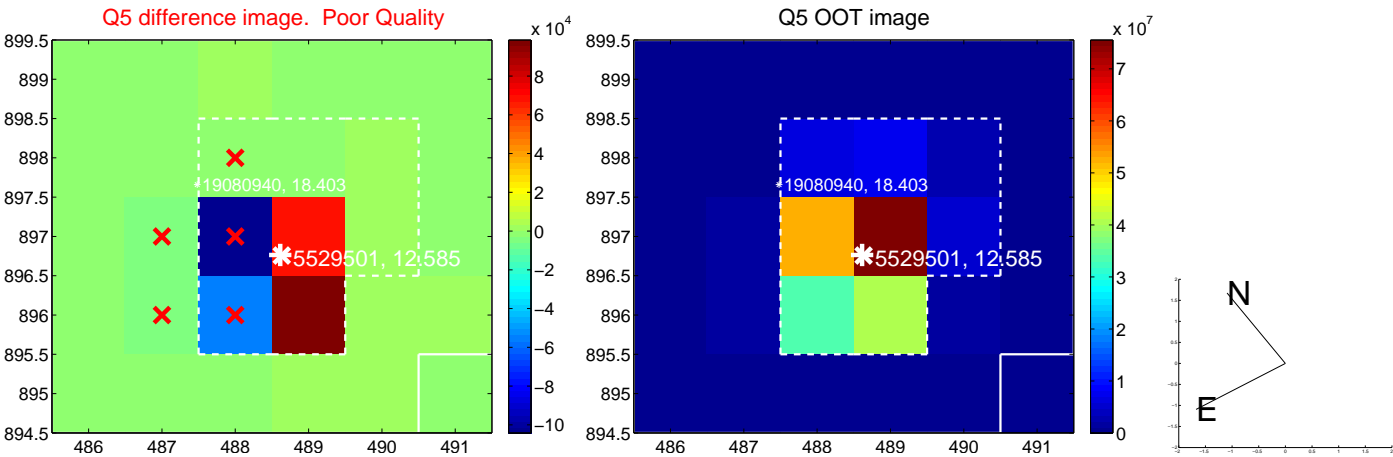


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

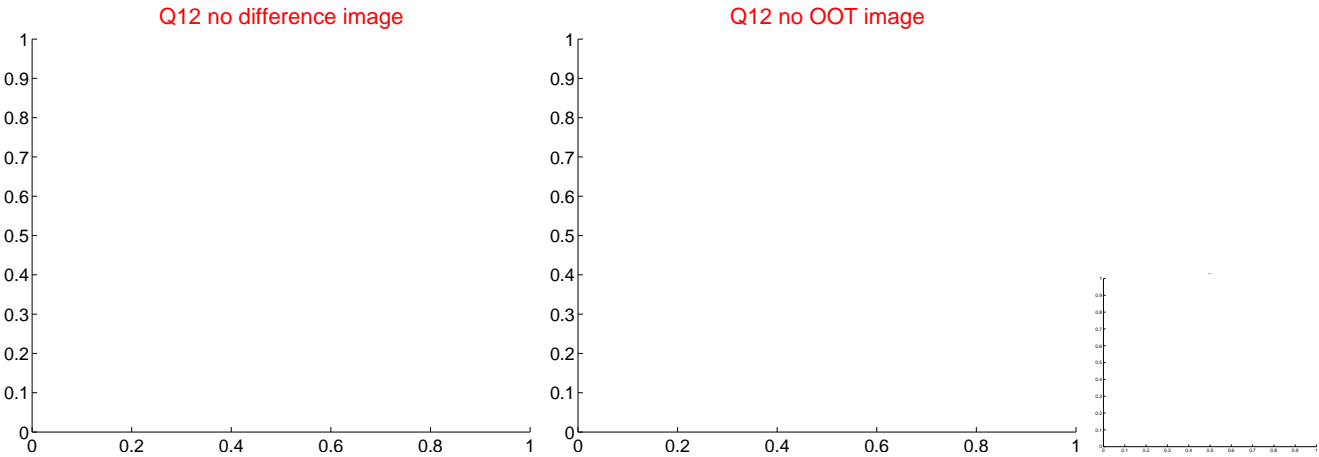
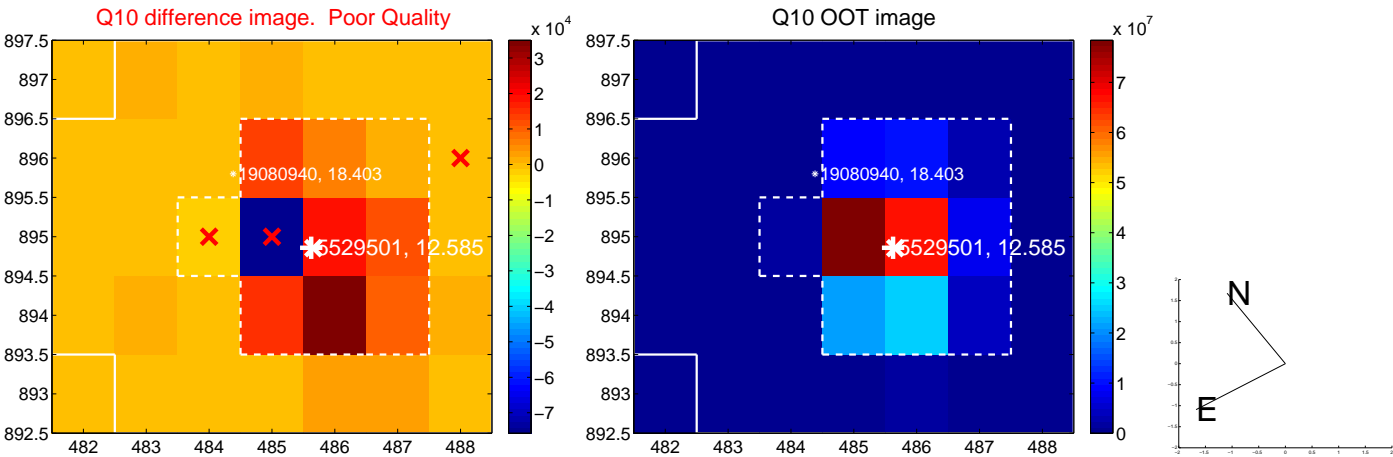
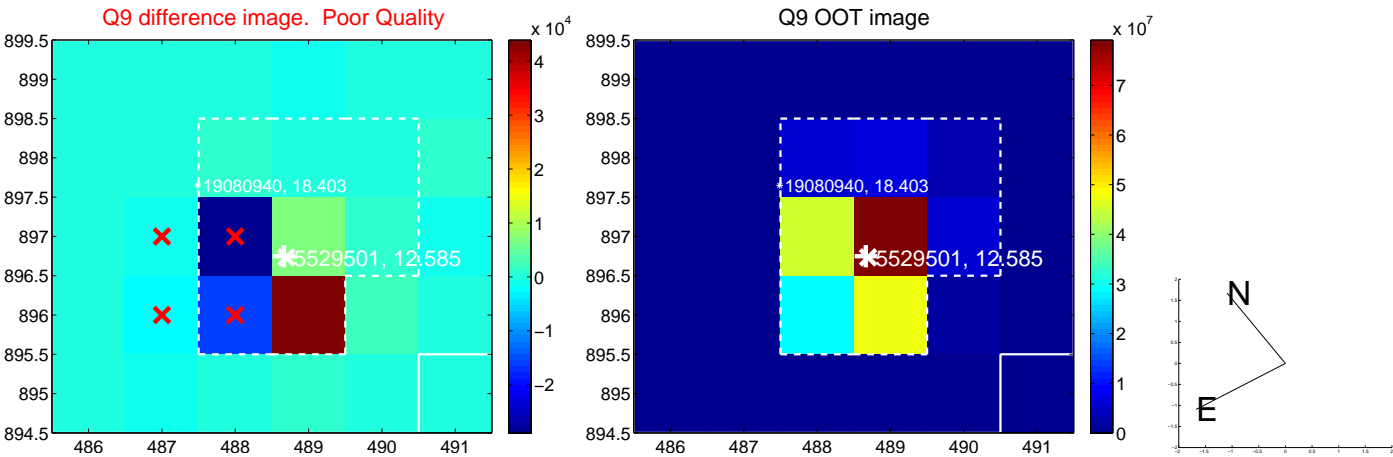
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



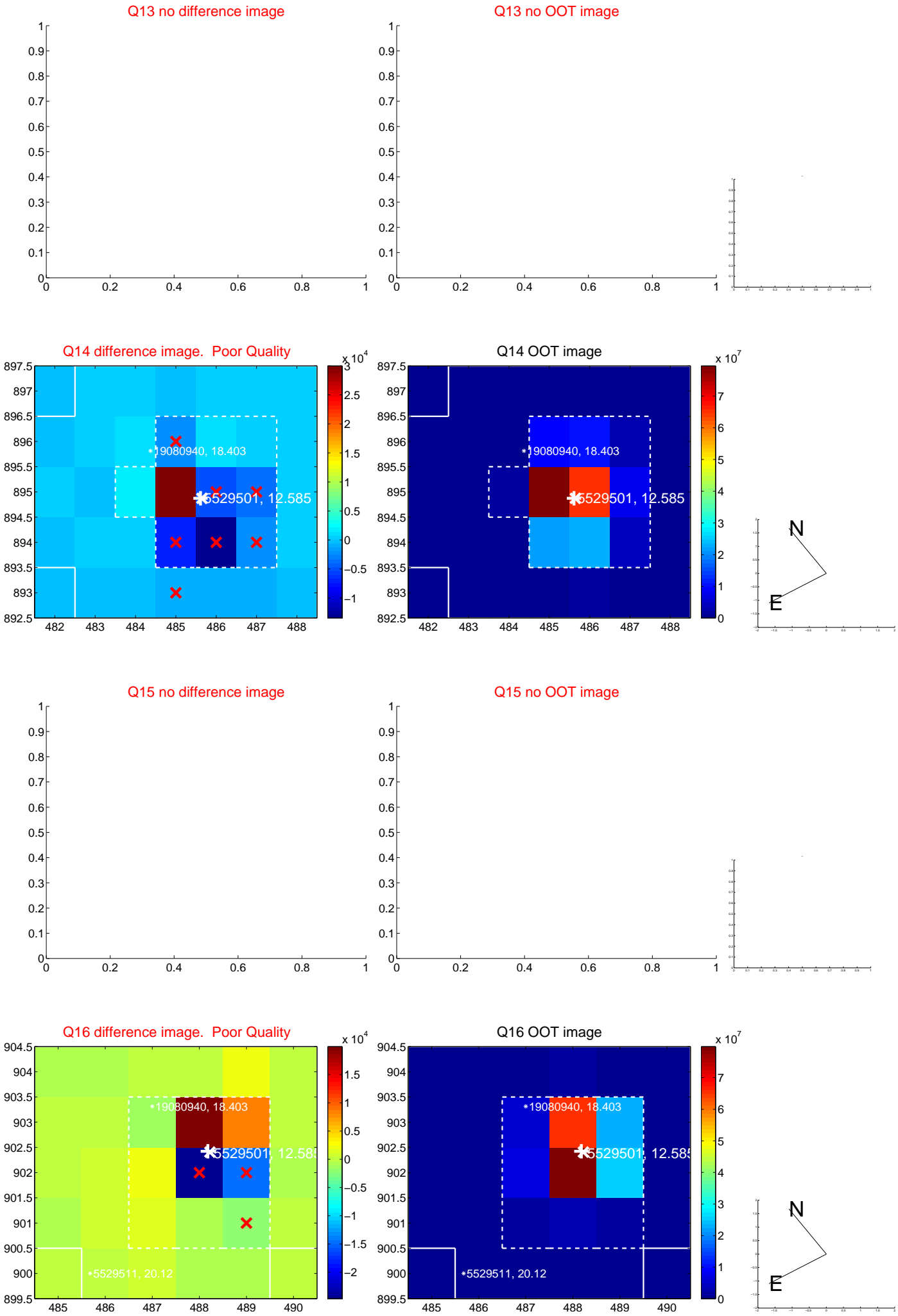
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



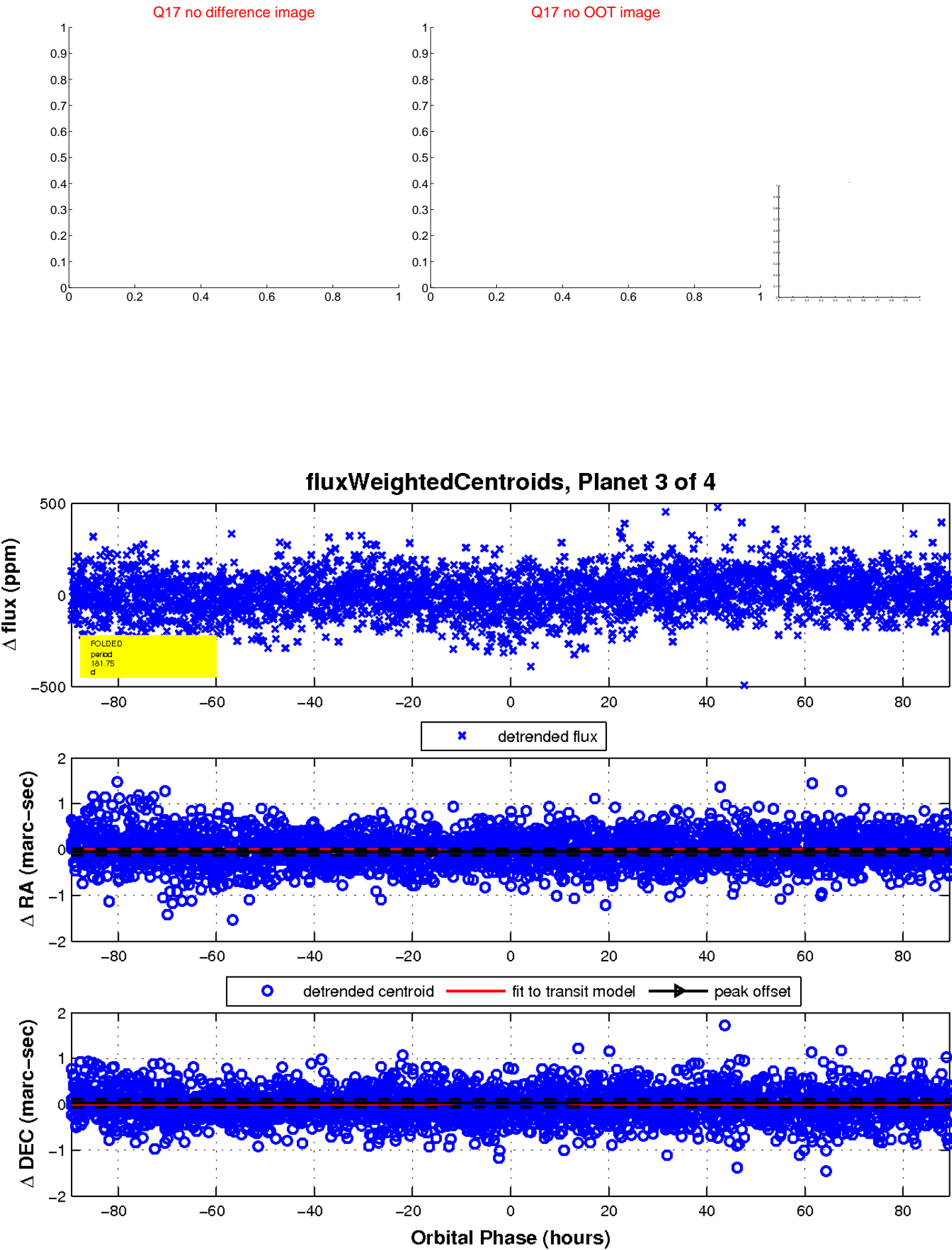
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

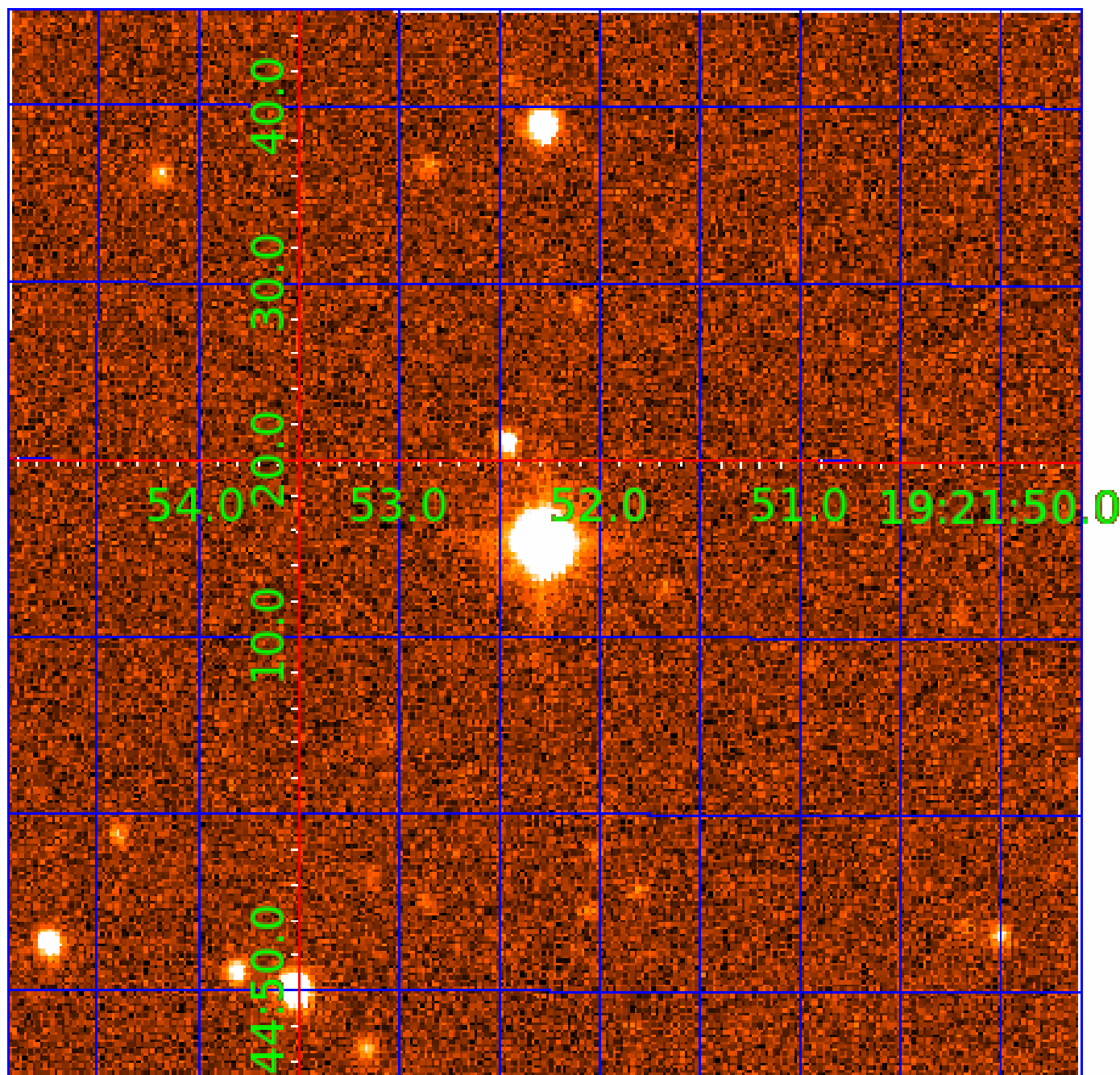


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005529501

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
005529501-01	OBS	6592.01	1.519521	132.555614	10.4	4.982	8.3	7.9	1.31	6168	0.49	3090.63
005529501-02	OBS	No	610.743612	319.826752	300.0	2.583	14.6	6.2	1.31	6168	2.49	1.04
005529501-03	OBS	No	181.746516	268.110386	85.3	29.841	9.7	5.6	1.31	6168	1.36	5.24
005529501-04	OBS	No	628.201616	319.026794	164.1	5.896	11.2	6.7	1.31	6168	1.91	1.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005529501-01	OBS	FP	0.00	1	0	0	1	MOD_NONUNIQ_ALT—EPHEM_MATCH
005529501-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005529501-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005529501-04

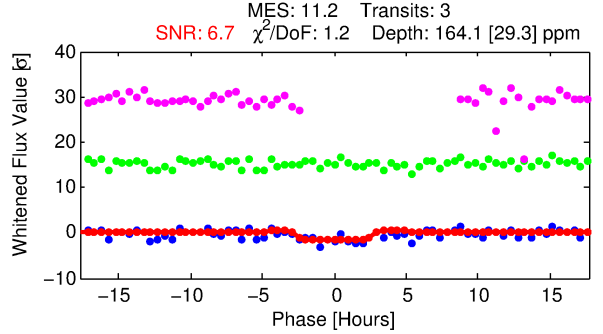
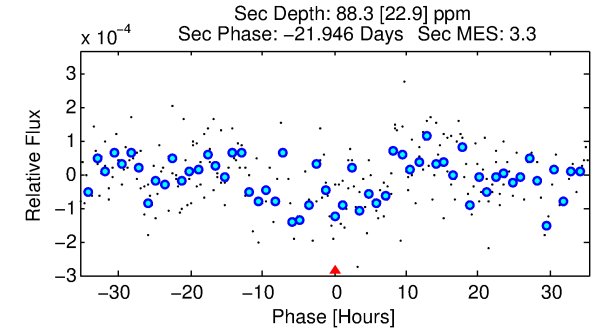
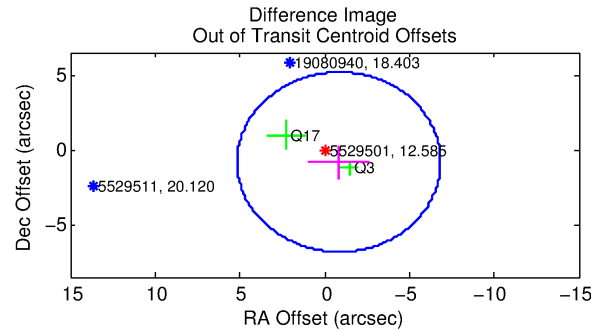
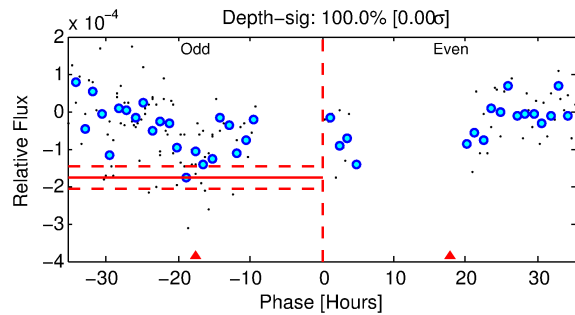
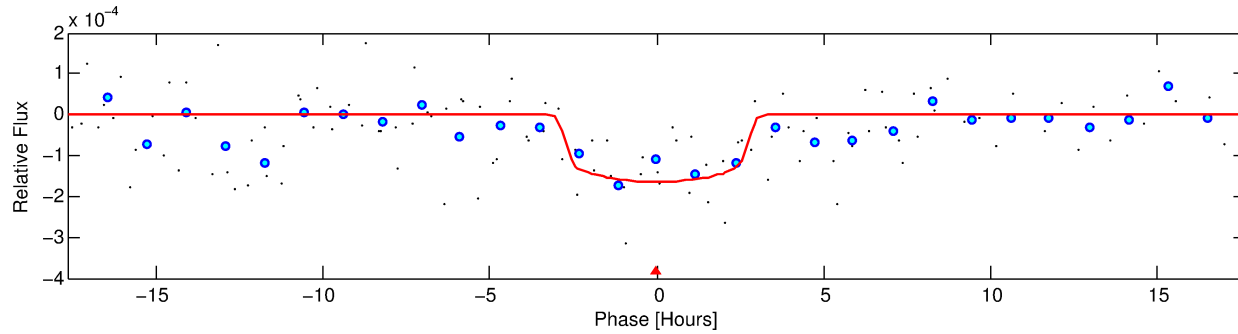
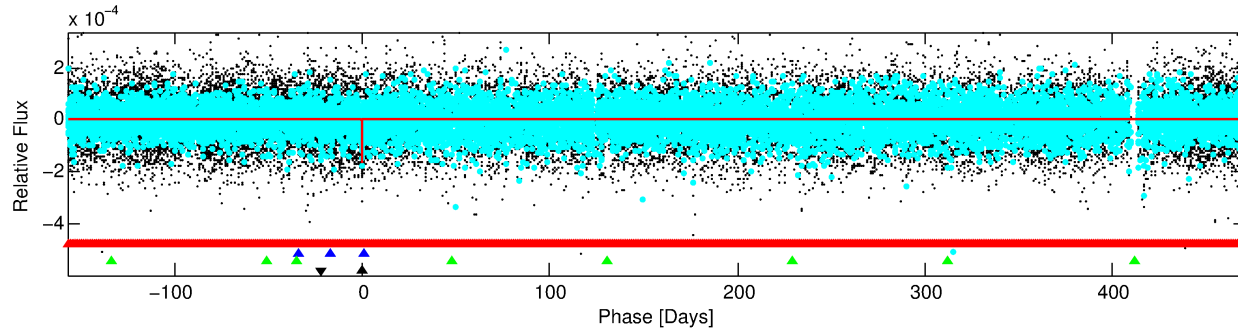
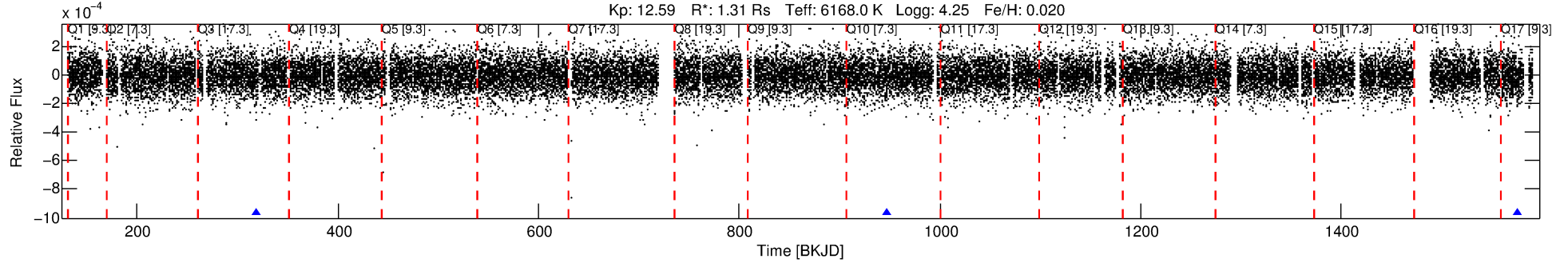
No Significant Match Found

DV One-Page Summary

KIC: 5529501 Candidate: 4 of 4 Period: 628.202 d

KOI: K06592 Corr: No Ephemeris Match

Kp: 12.59 R*: 1.31 Rs Teff: 6168.0 K Logg: 4.25 Fe/H: 0.020



DV Fit Results:

Period = 628.20162 [0.00939] d
Epoch = 319.0268 [0.0144] BKJD
Rp/R* = 0.0134 [0.0101]
a/R* = 434.43 [1647.15]
b = 0.86 [1.15]
Seff = 1.00 [0.23]
Teq = 255 [15] K
Rp = 1.91 [1.48] Re
a = 1.4858 [0.2252] AU
Ag = 29255.64 [45086.67] [0.65σ]
Teffp = 5161 [1968] K [2.49σ]

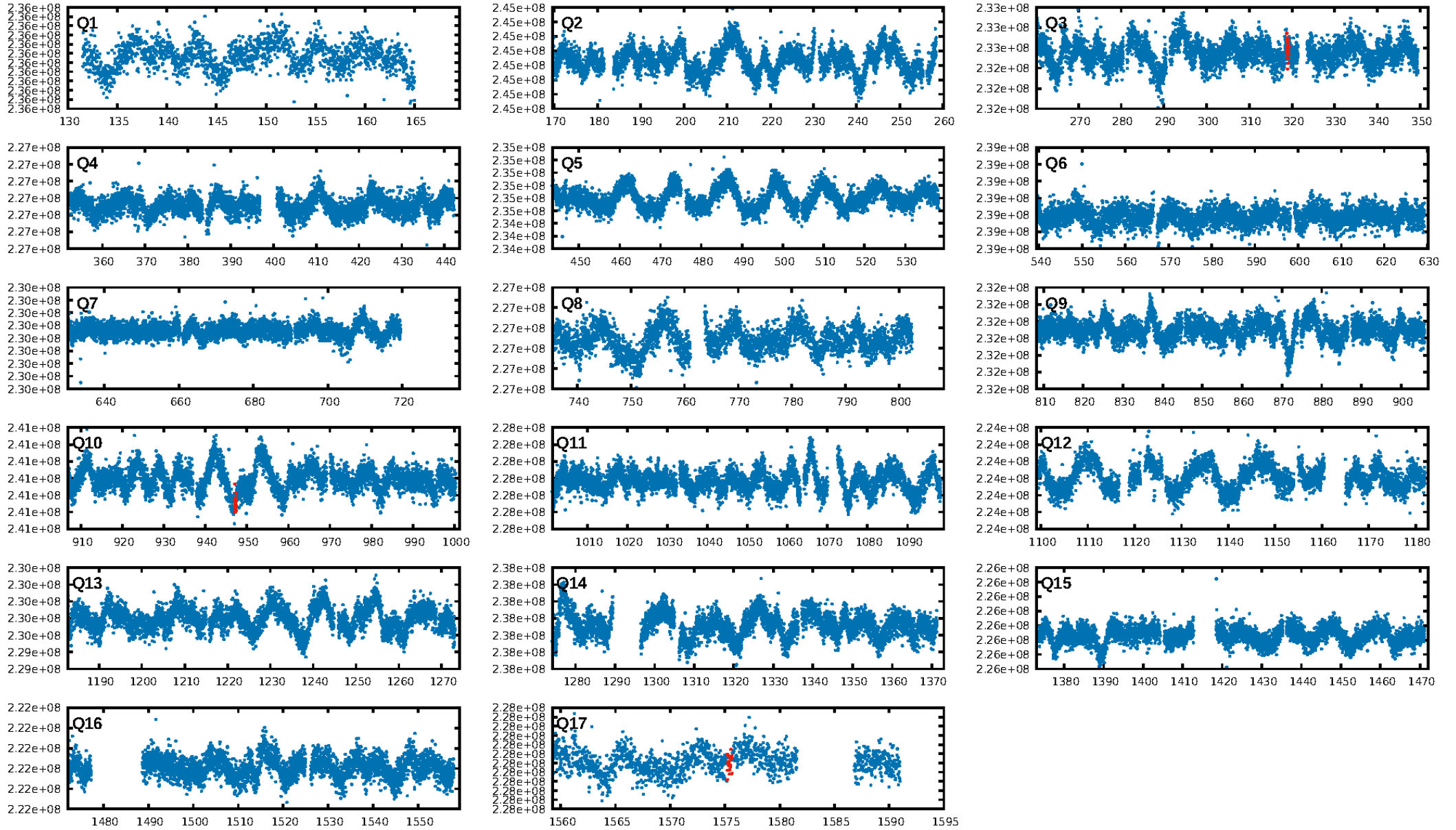
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [65.10σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.9%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 8.29e-20
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.1936
Centroid-sig: 4.6%
Centroid-so: 1.613 arcsec [1.31σ]
OotOffset-rm: 1.180 arcsec [0.59σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 1.089 arcsec [0.53σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.33 [1/3]

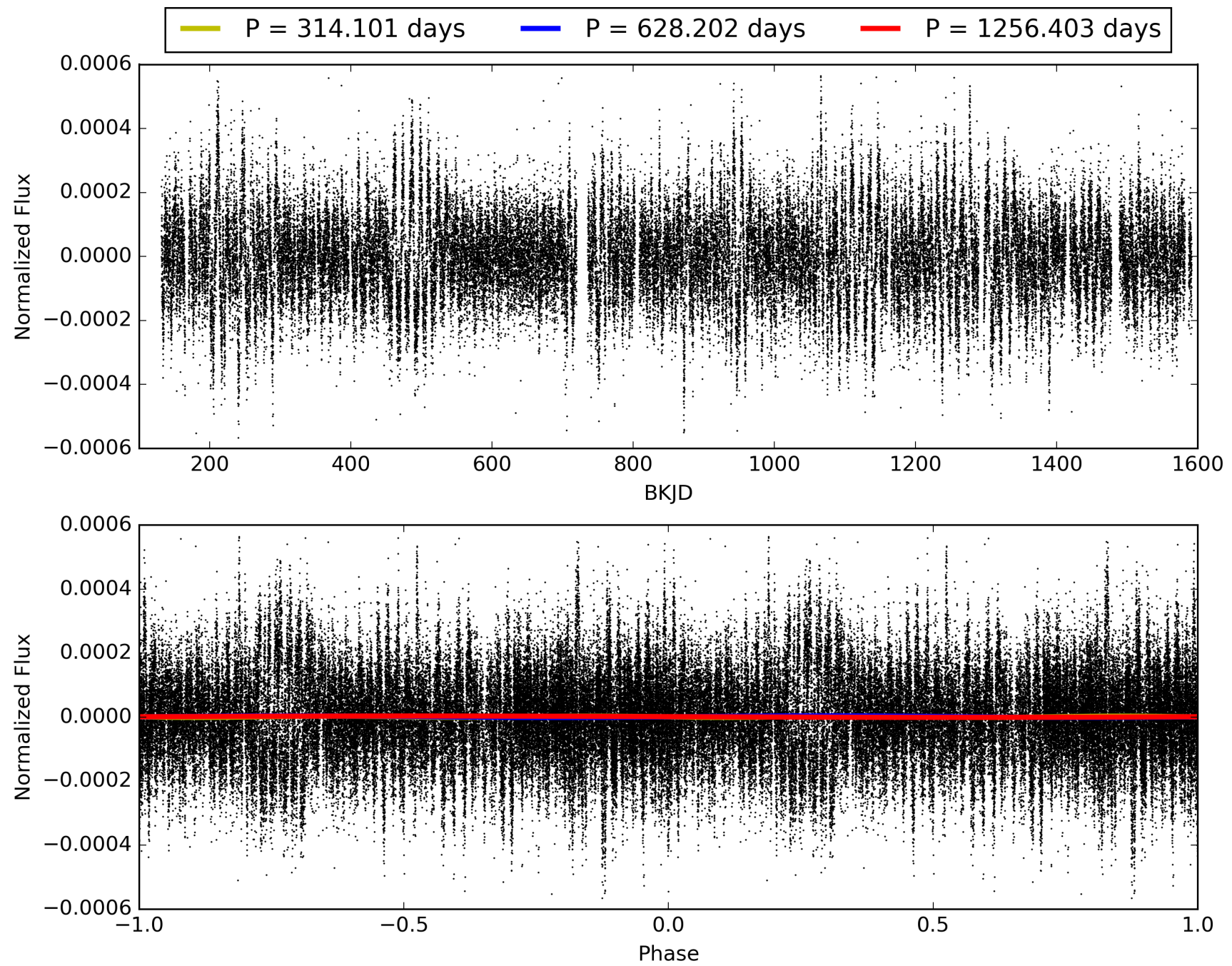
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:59:13 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005529501-04, PDC Light Curves

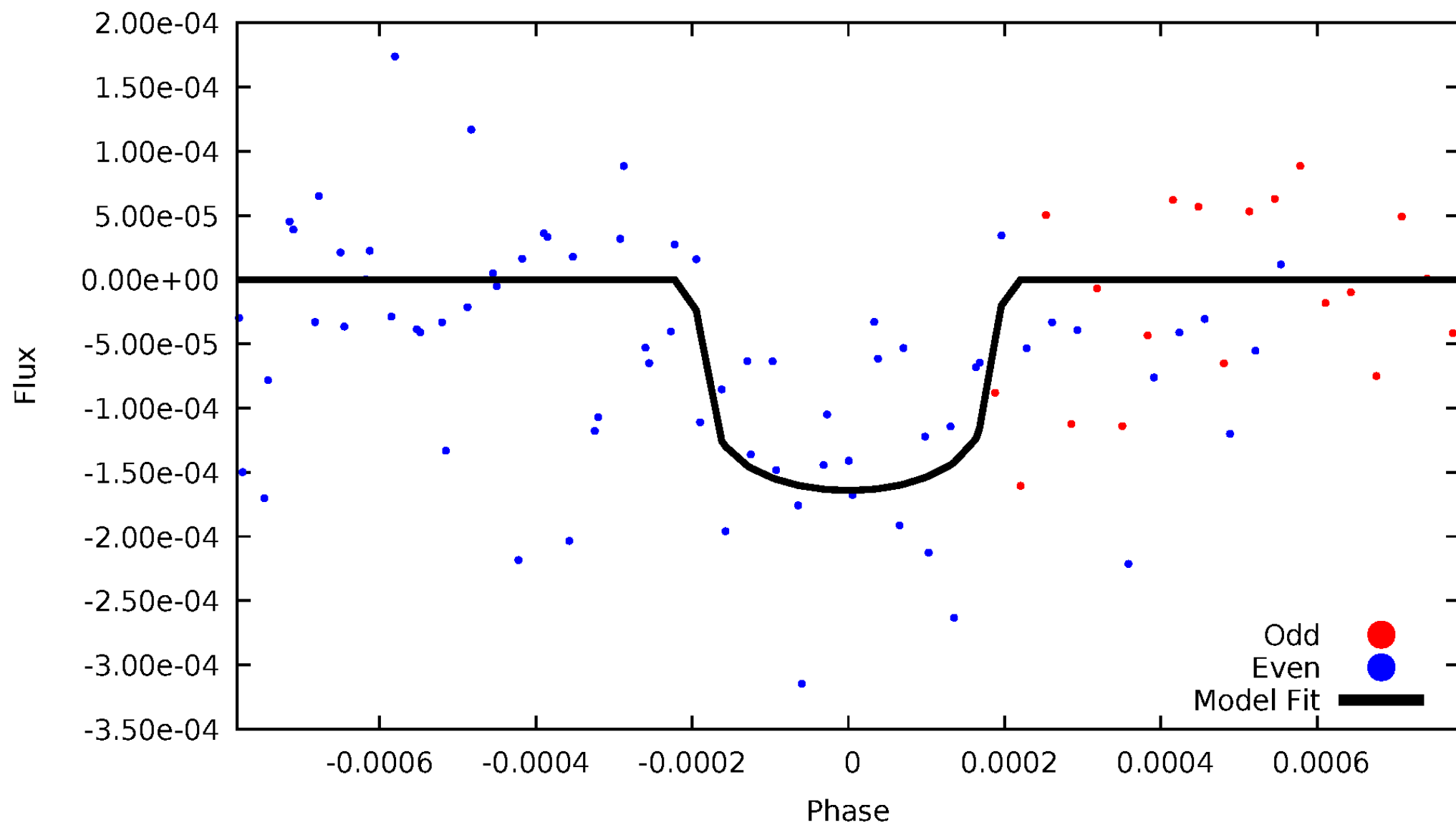


TCE 005529501-04



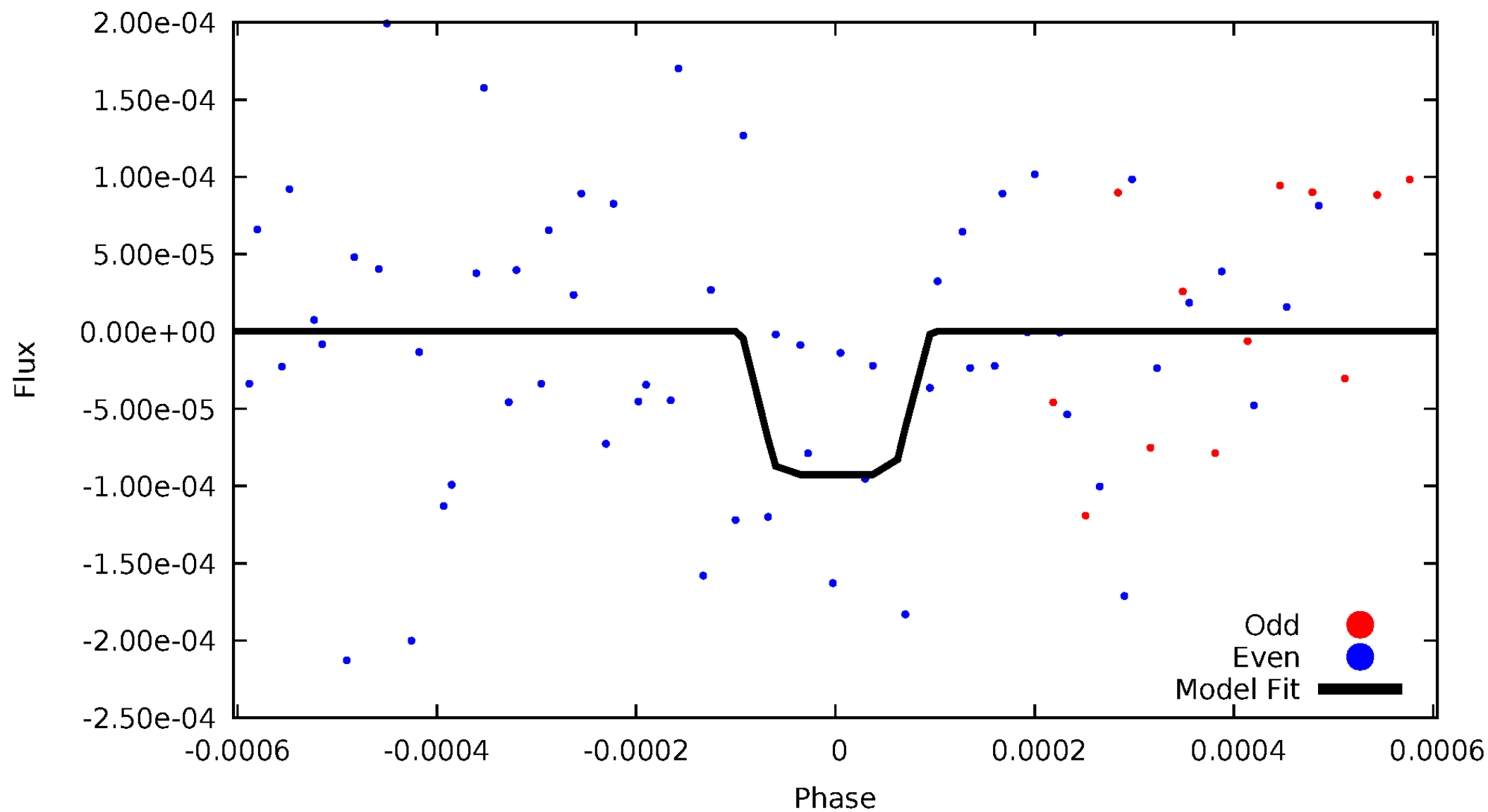
DV Odd/Even

TCE 005529501-04



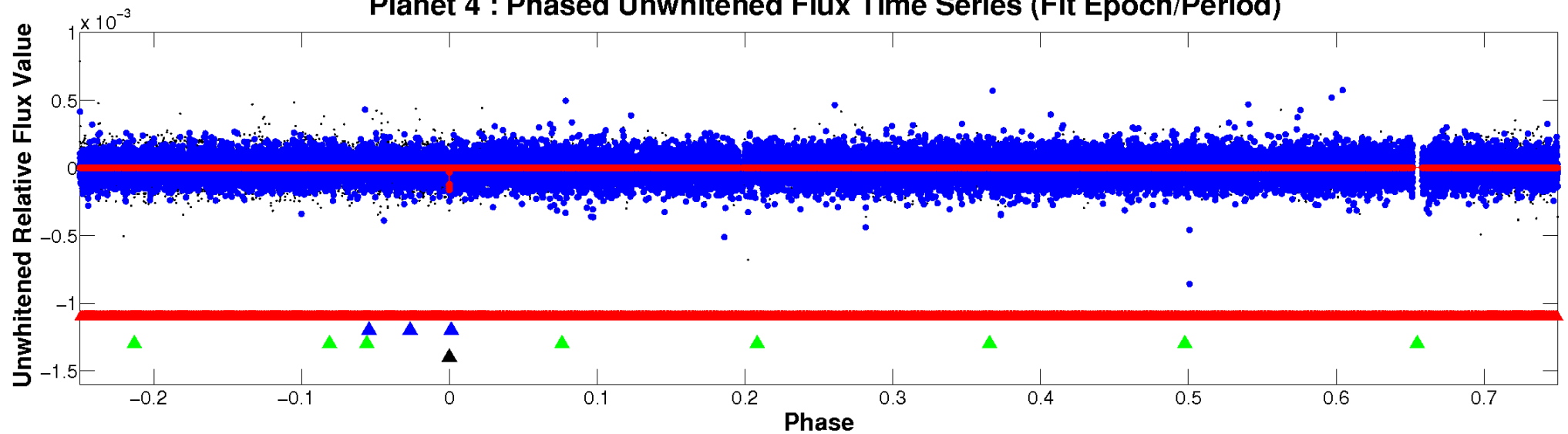
ALT Odd/Even

TCE 005529501-04

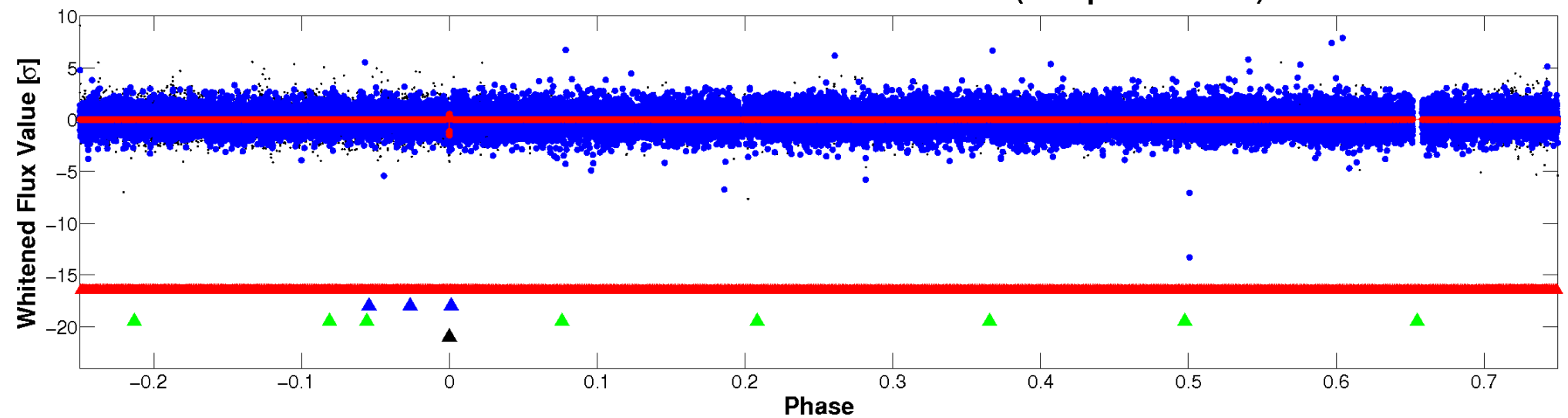


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

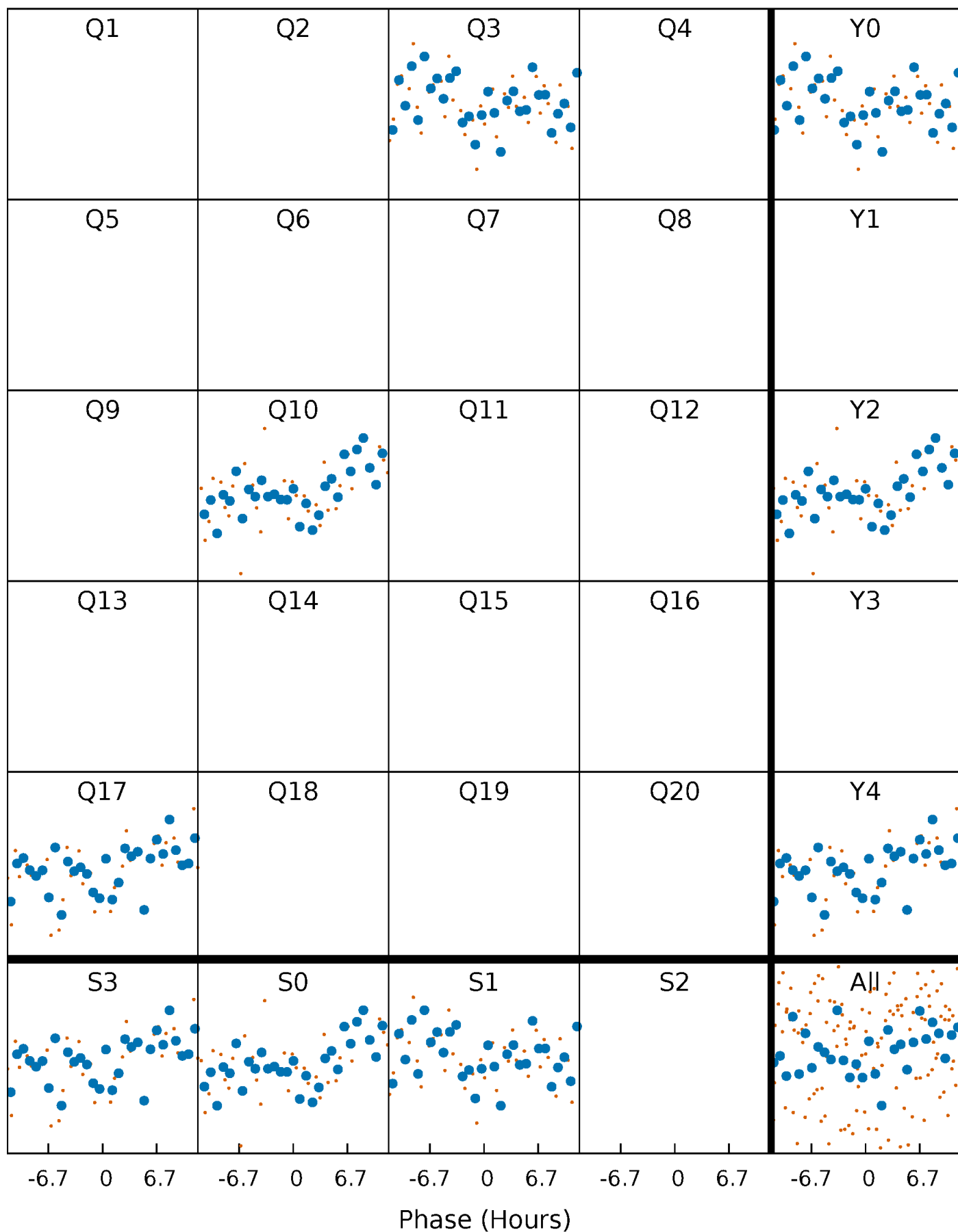


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



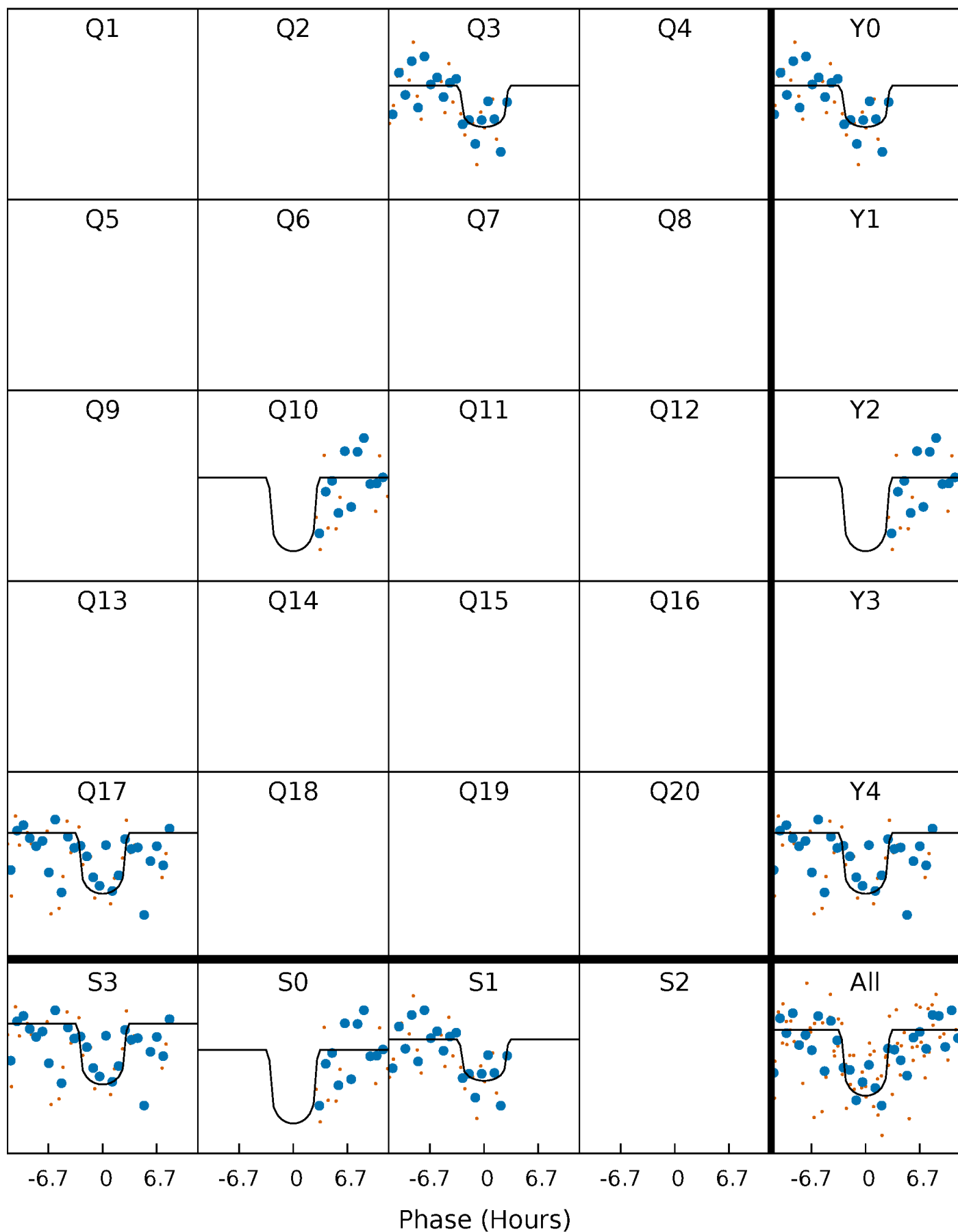
PDC Quarter-Phased Transit Curves

TCE 005529501-04 $P=628.201616$ Days $T_0=319.026794$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005529501-04 $P=628.201616$ Days $T_0=319.026794$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

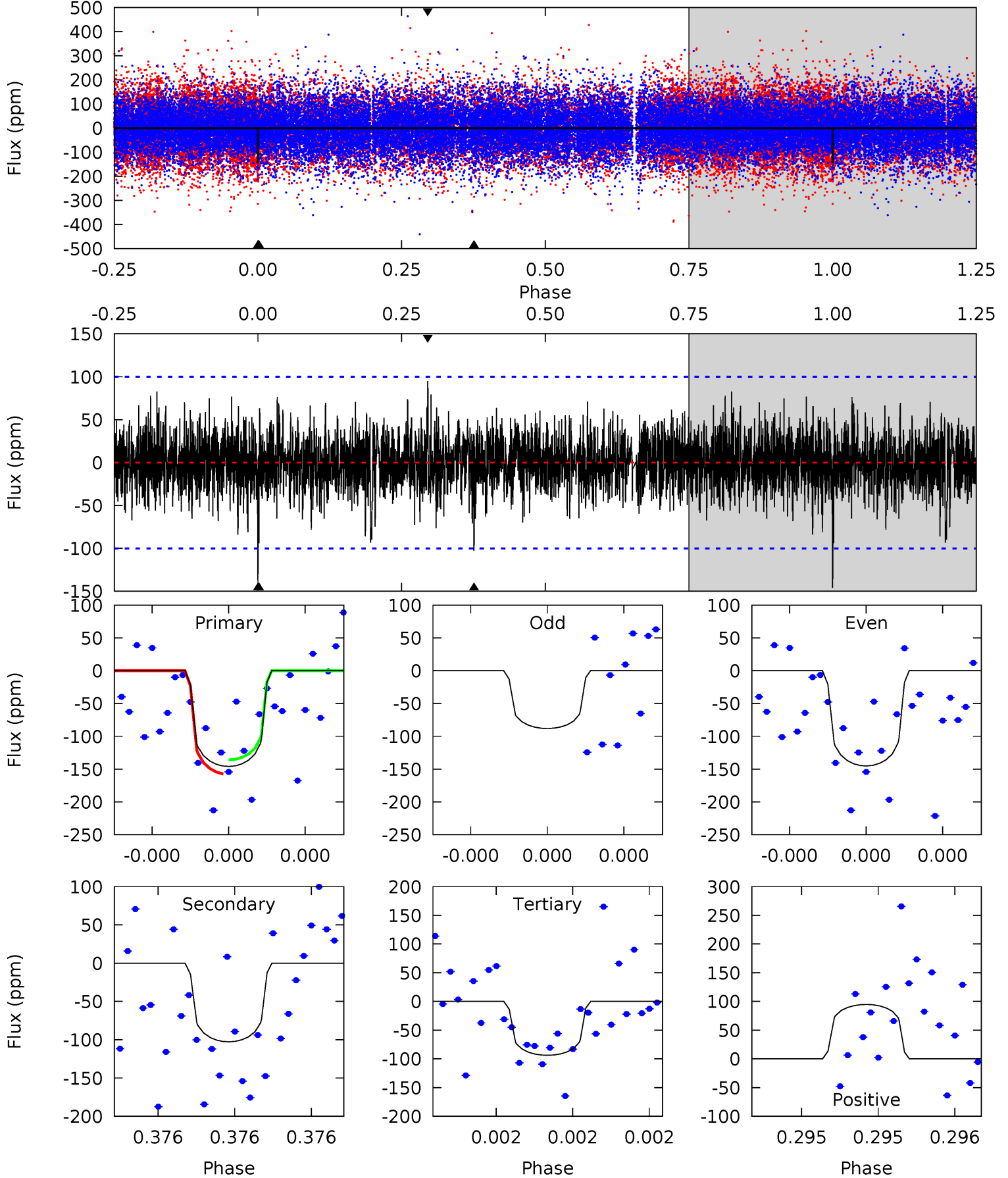
TCE 005529501-04 P=628.263858 Days $T_0=318.945208$ (BKJD)



DV Model-Shift Uniqueness Test

005529501-04, P = 628.201616 Days, E = 319.026794 Days

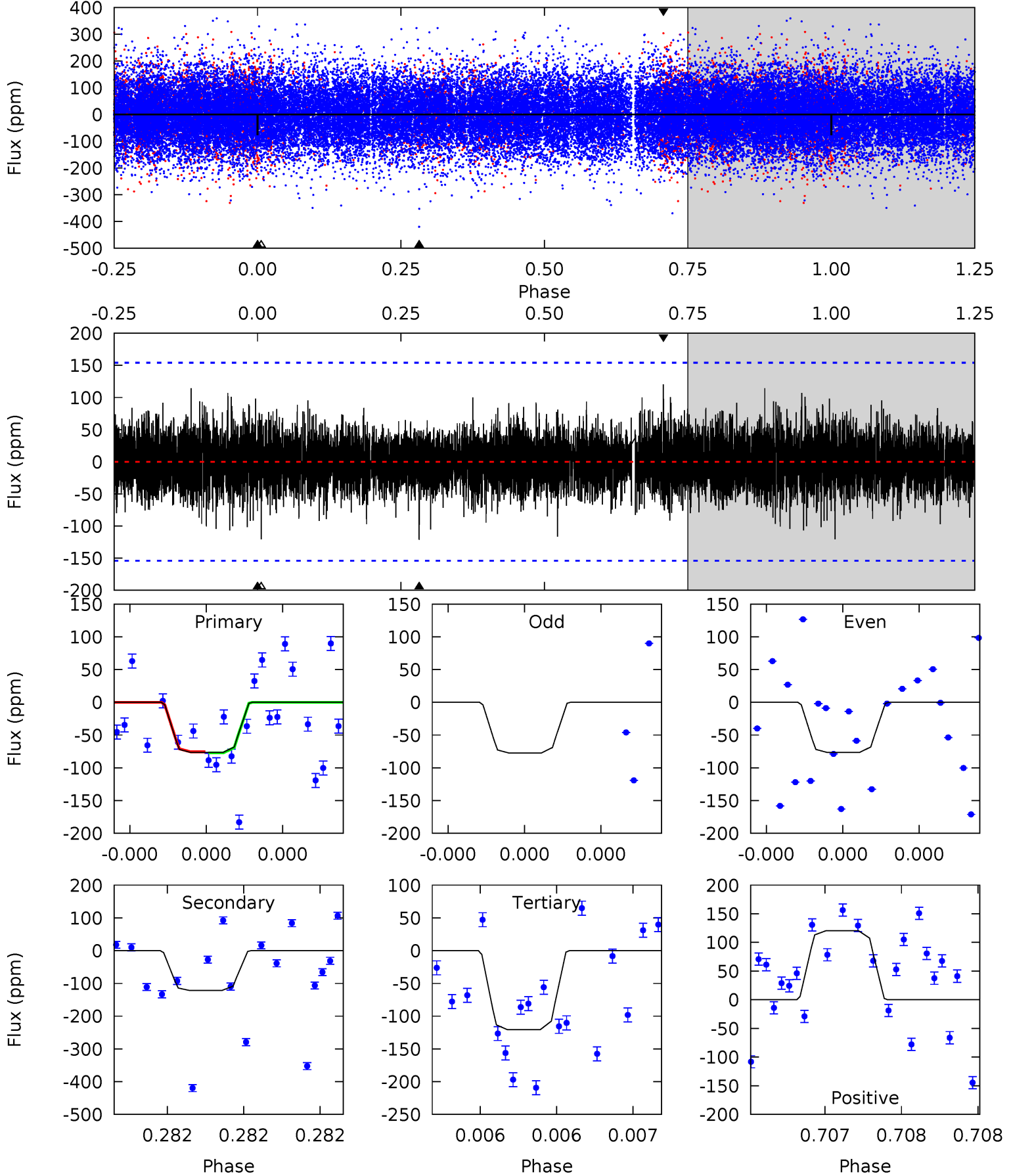
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.19	5.76	5.26	5.32	5.62	3.55	1.32	2.93	2.87	0.50	0.44	0.64	1.00	0.39	0.60



Alt Model-Shift Uniqueness Test

005529501-04, P = 628.263858 Days, E = 318.945208 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.86	4.54	4.51	4.50	5.76	3.76	1.04	-1.65	-1.64	0.03	0.04	0.02	1.00	0.50	0.03



Stellar Parameters For KIC 005529501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6168^{+80}_{-86}	$4.250^{+0.125}_{-0.125}$	$0.020^{+0.150}_{-0.150}$	$1.307^{+0.230}_{-0.188}$	$1.105^{+0.113}_{-0.066}$	$0.697^{+0.391}_{-0.252}$
	+1%/-1%	+3%/-3%	+750%/-750%	+18%/-14%	+10%/-6%	+56%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005529501-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-103 ± 18	$2.10^{+1.37}_{-1.18}$	357^{+18}_{-16}	5149^{+2927}_{-952}	$28565^{+120049}_{-18552}$
Alt.	-121 ± 27	$1.66^{+1.35}_{-1.02}$	358^{+16}_{-17}	6051^{+4442}_{-1409}	$55538^{+264422}_{-38591}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

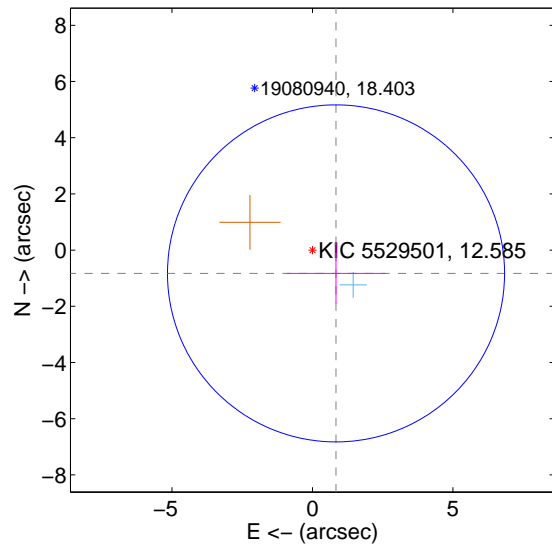
Supplemental centroid analysis for 005529501-04. Kepler magnitude: 12.59. Transit SNR 6.72

There are 1 quarters with good PRF difference image offsets

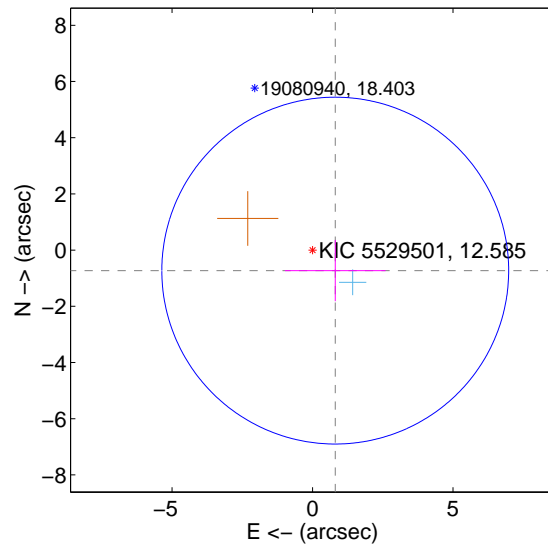
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.180 ± 1.999	0.59	-0.839 ± 1.759	-0.829 ± 1.066
PRF-fit source offset from KIC position	1.089 ± 2.057	0.53	-0.809 ± 1.789	-0.730 ± 1.090
photometric centroid source offset	1.61 ± 1.23	1.31	-0.83 ± 1.13	1.39 ± 1.26

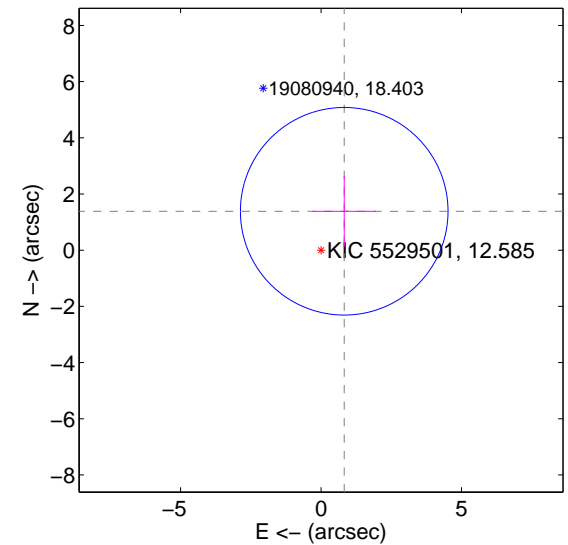
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

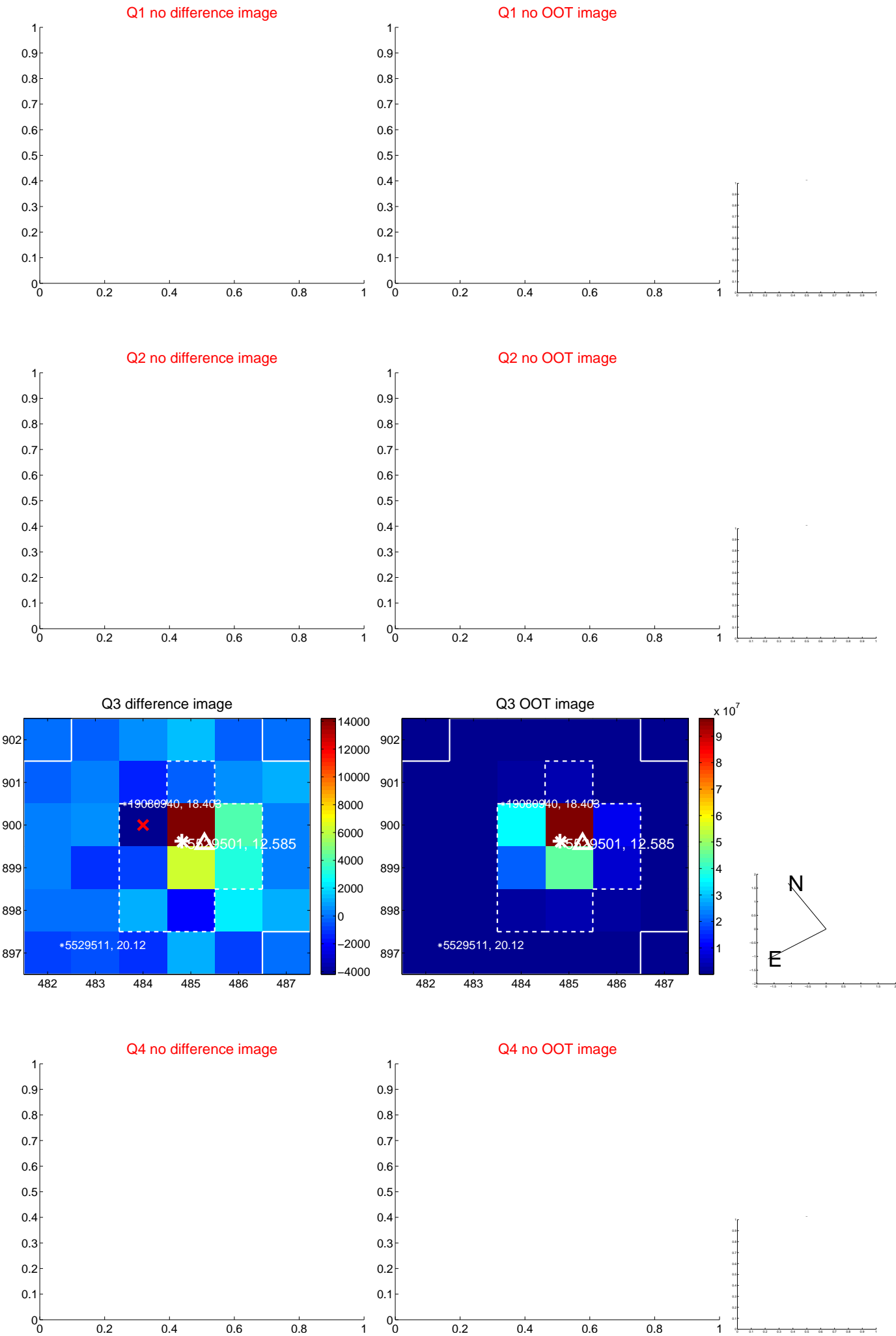


offset from photometric centroids



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

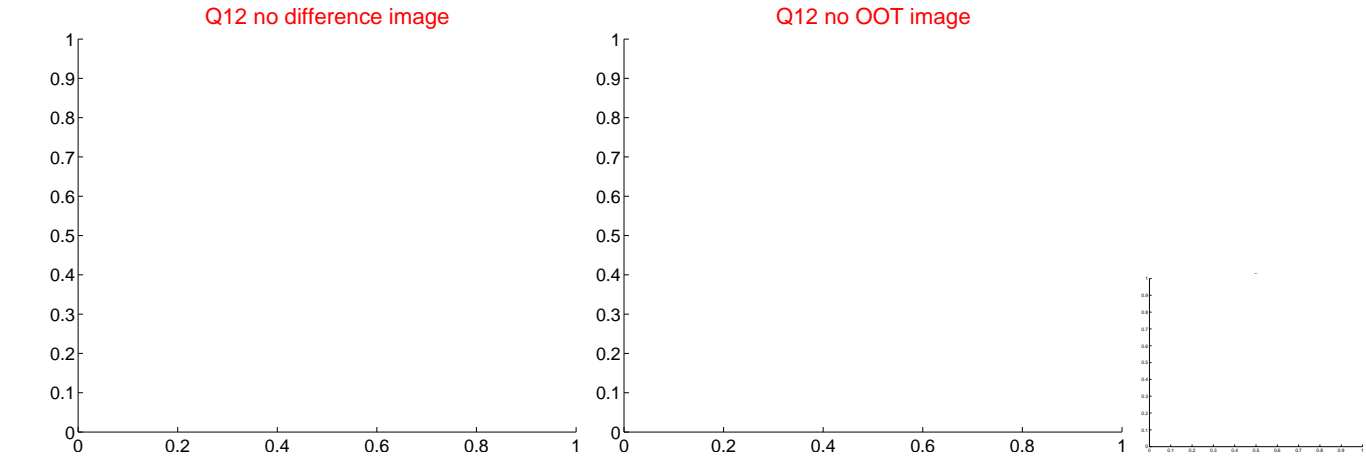
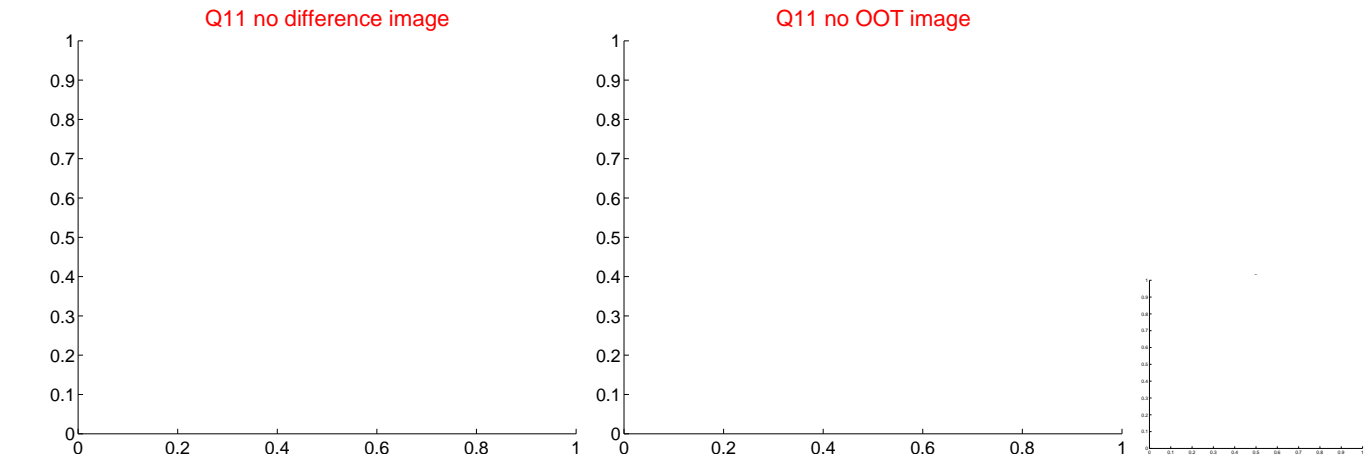
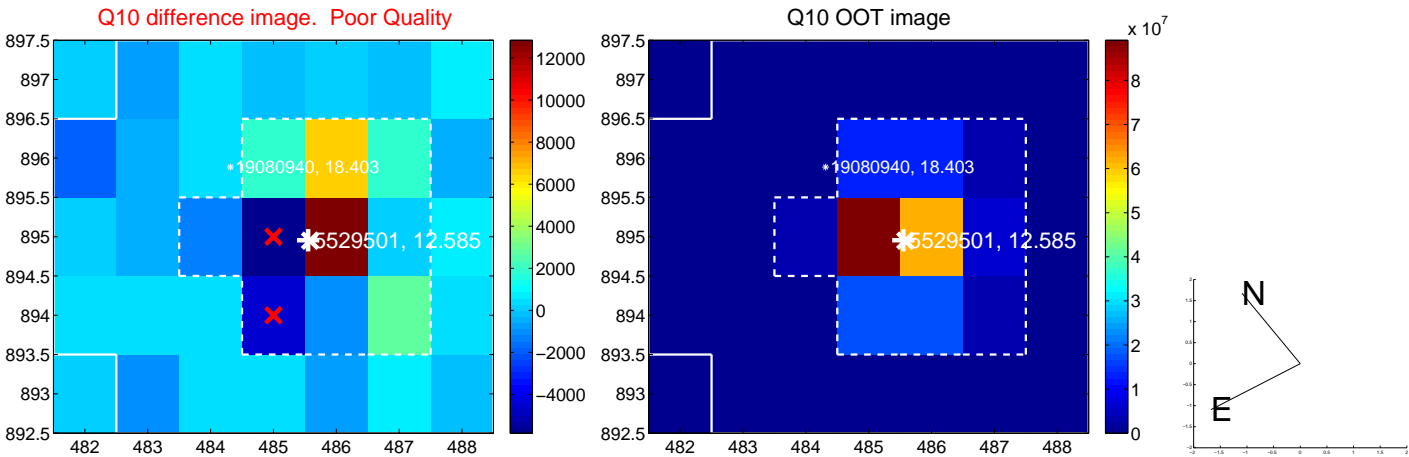
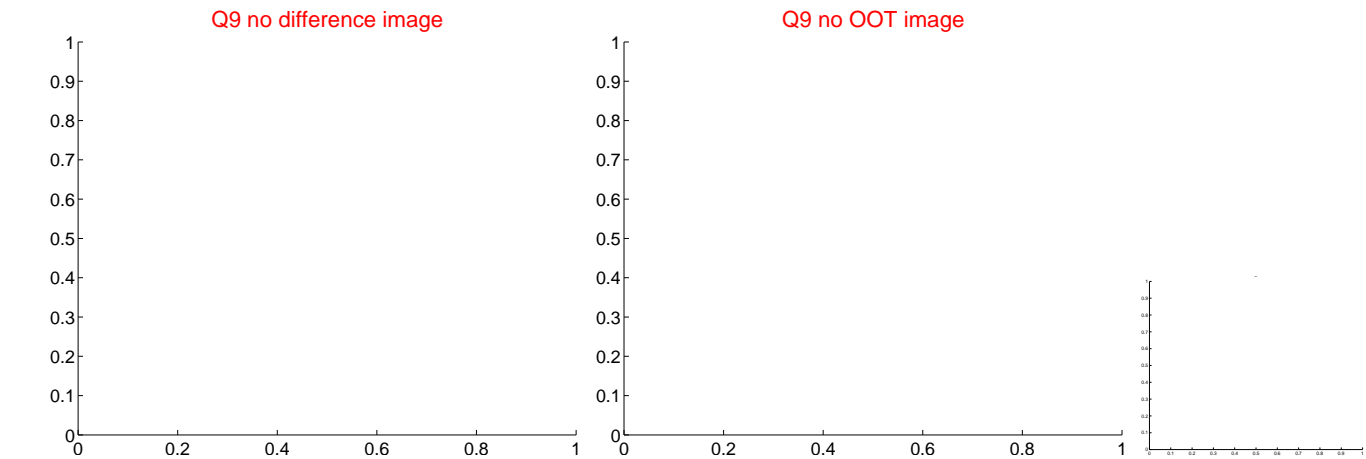
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



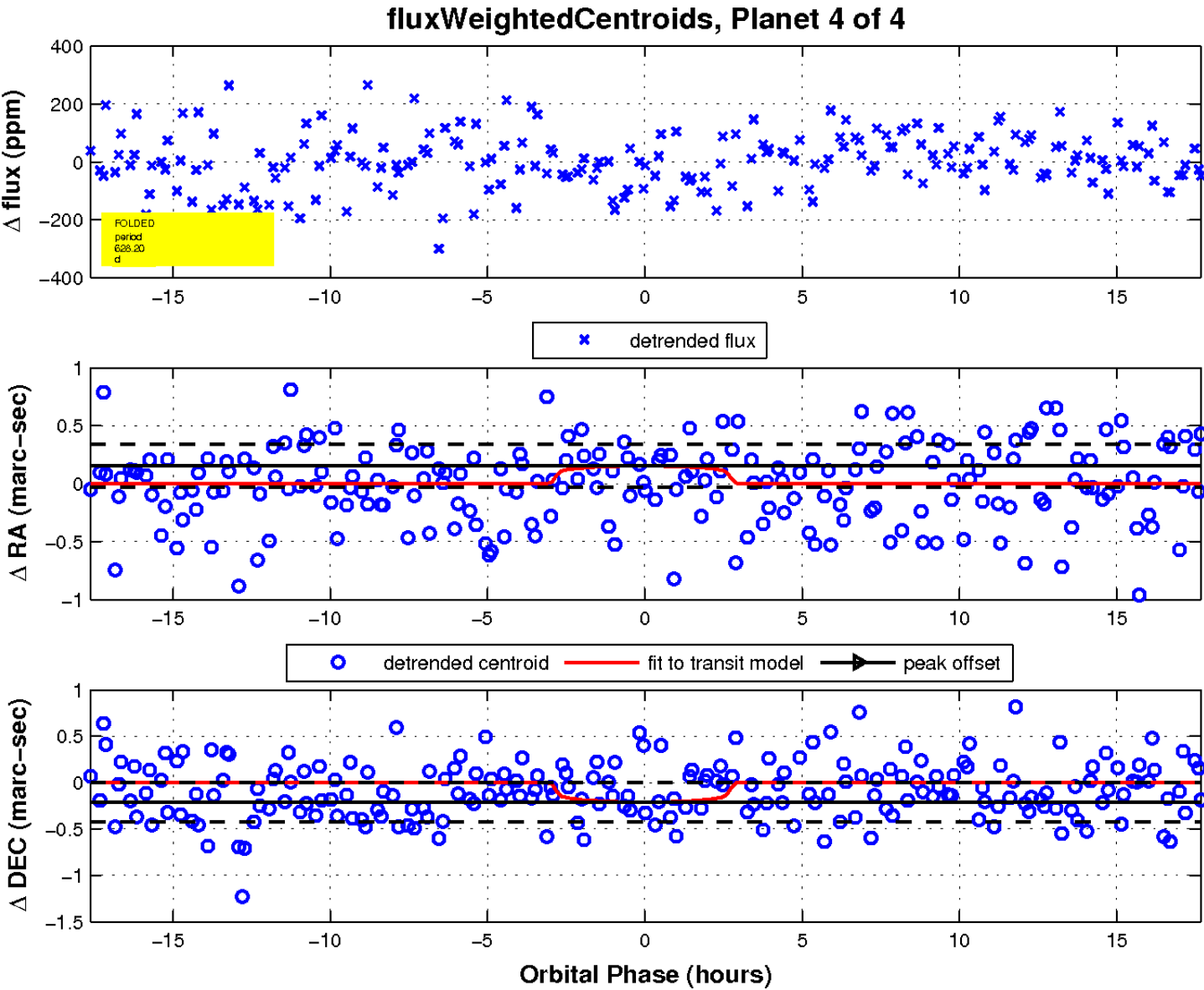
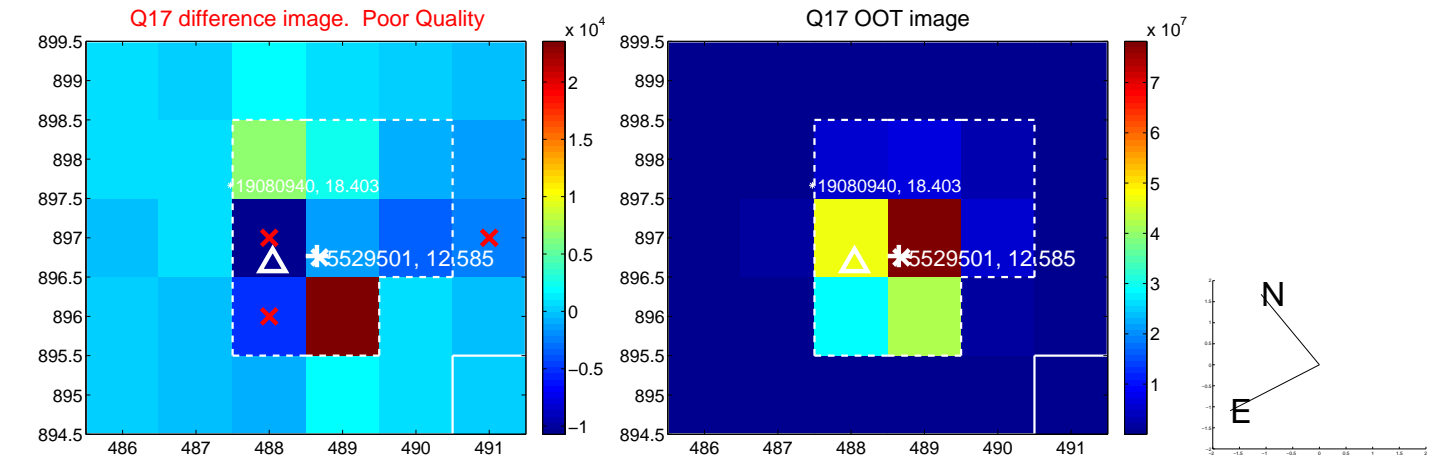
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

